

FIG. 1

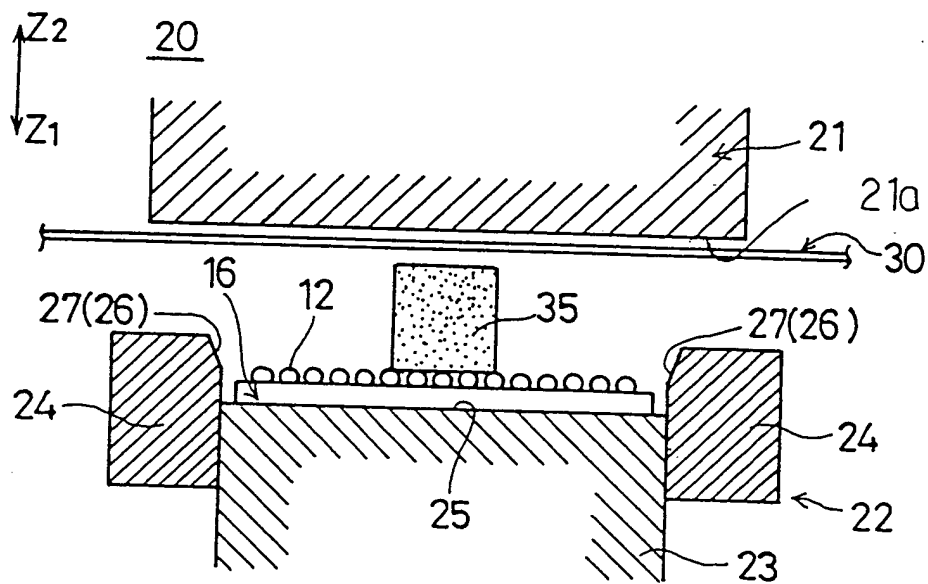


FIG. 1A

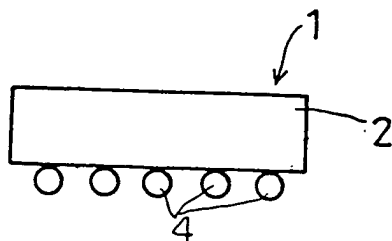


FIG. 1B

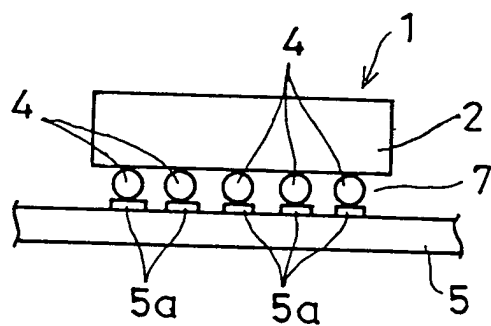


FIG. 1C

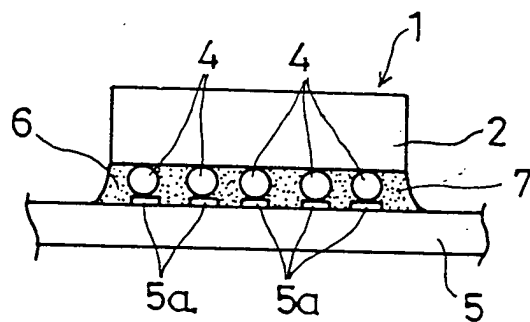


FIG. 2

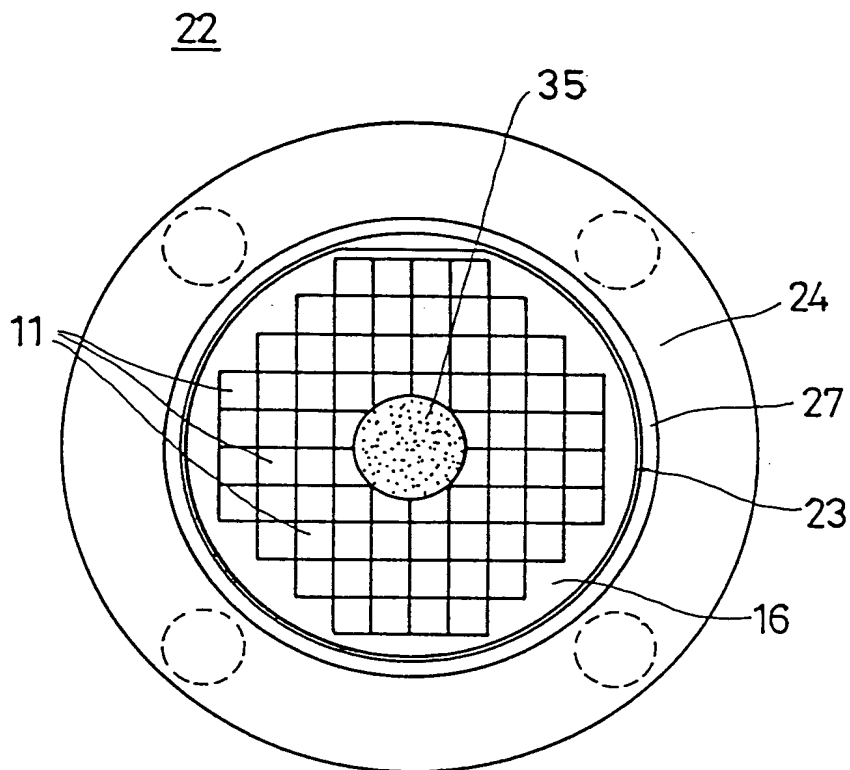


FIG. 3

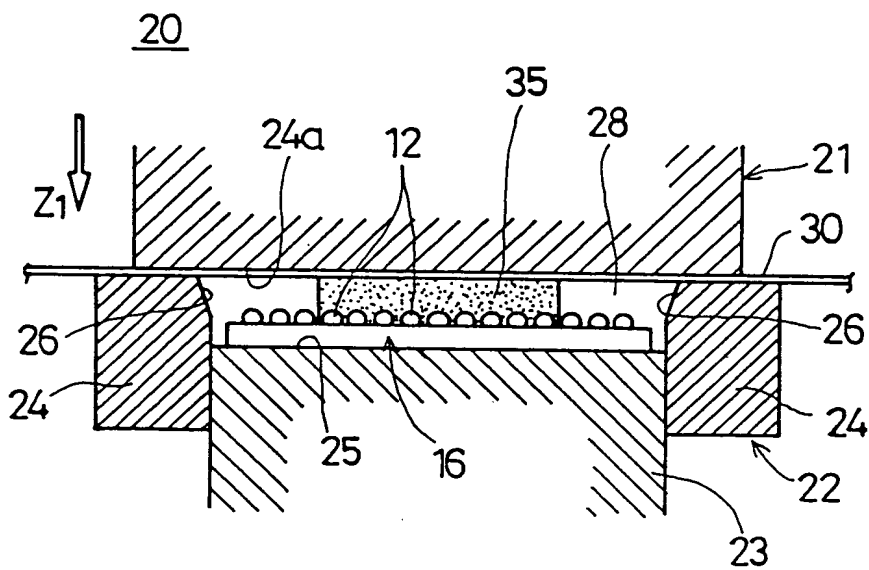


FIG. 4

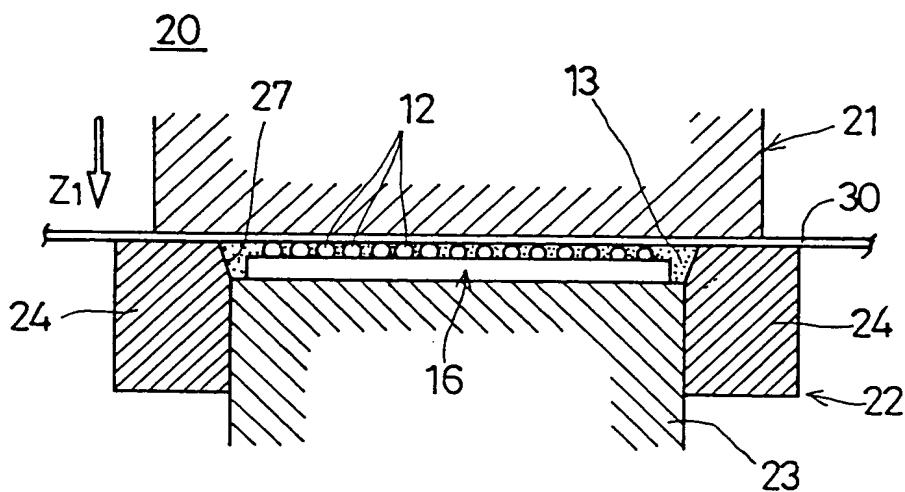
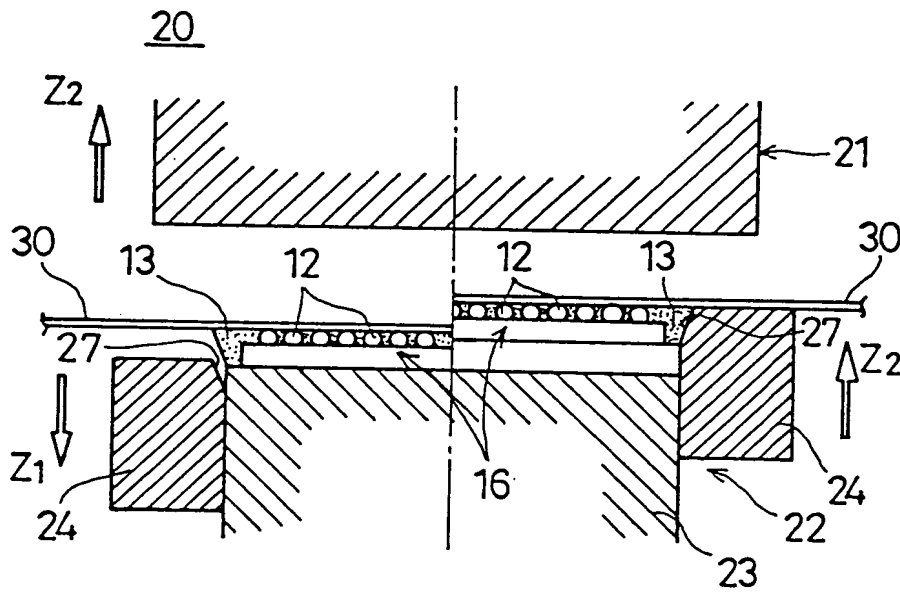


FIG. 5



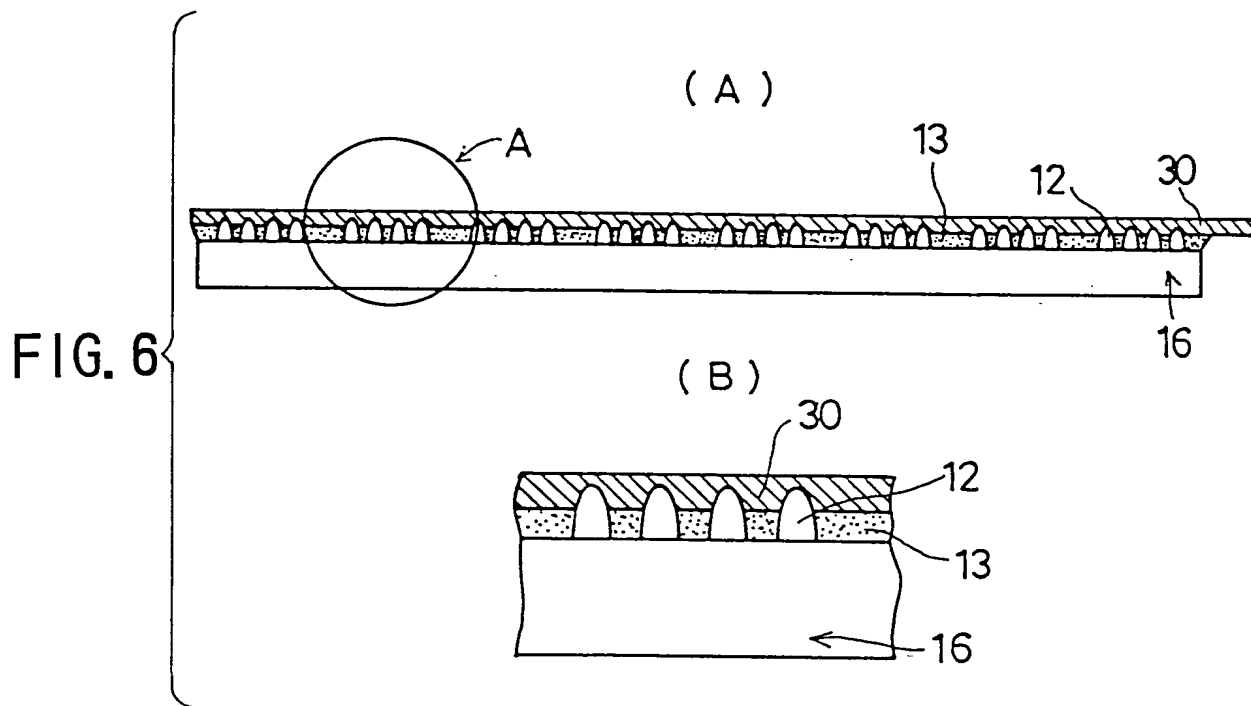


FIG. 7

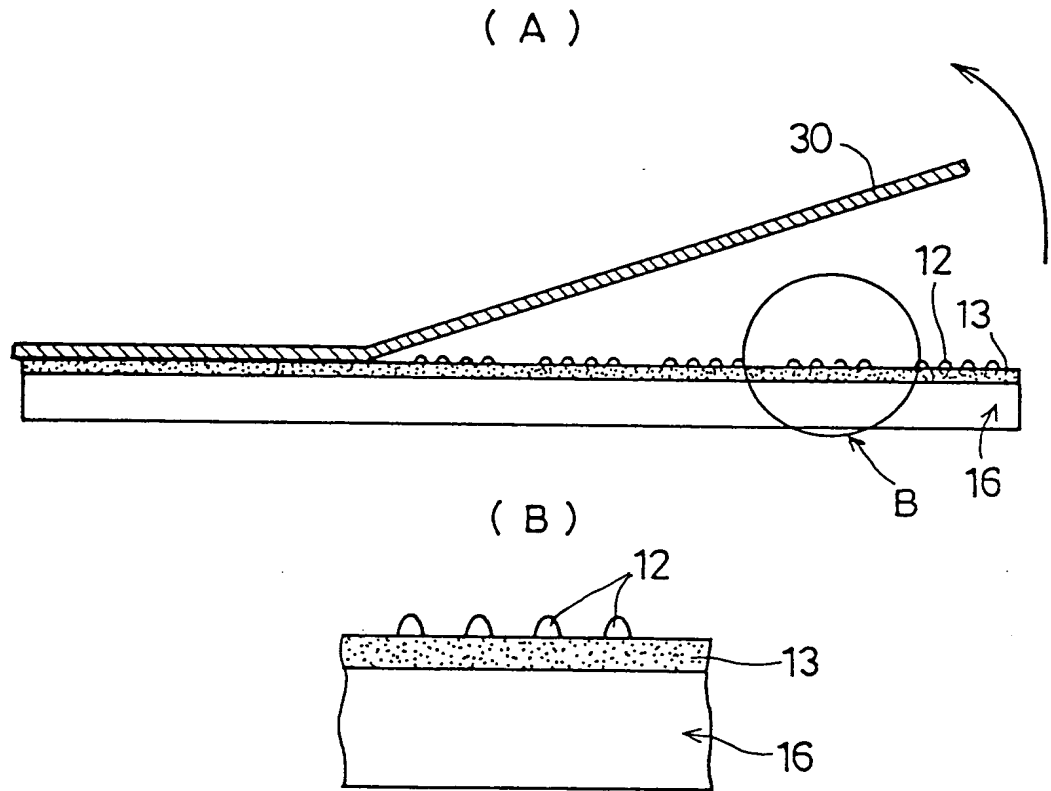


FIG. 8

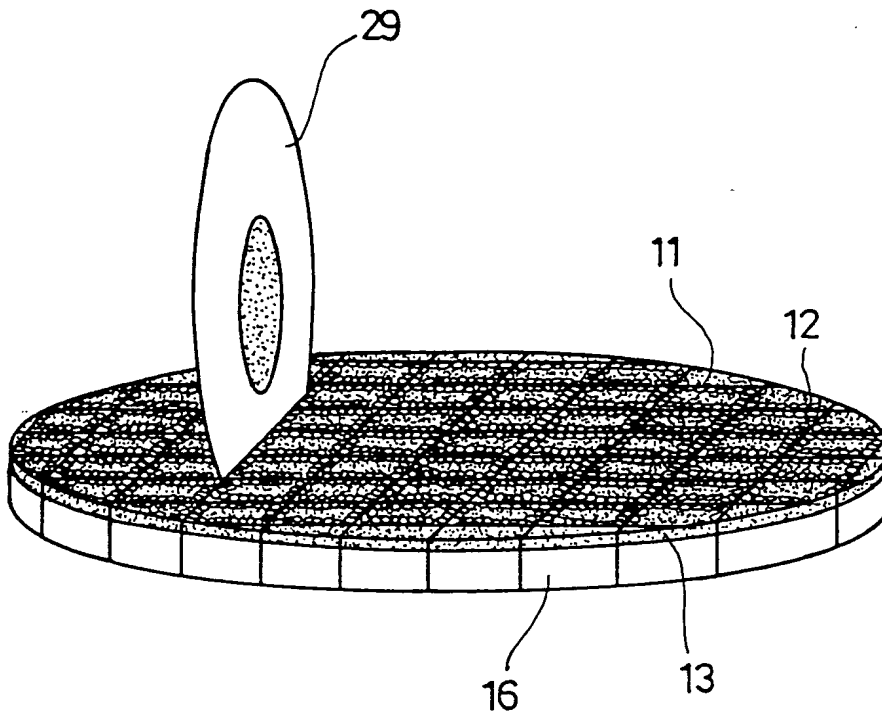






FIG. 10

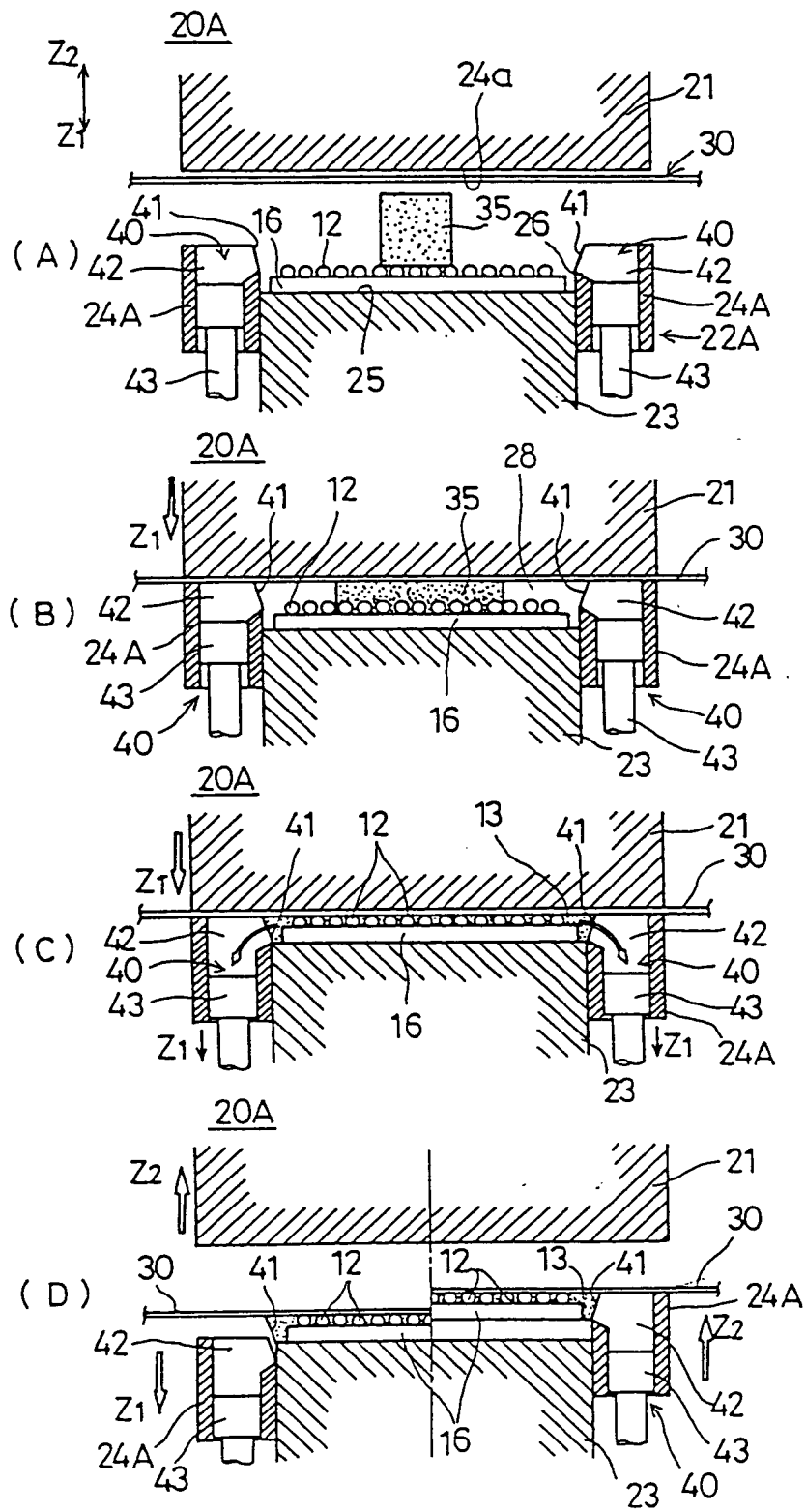


FIG. 11

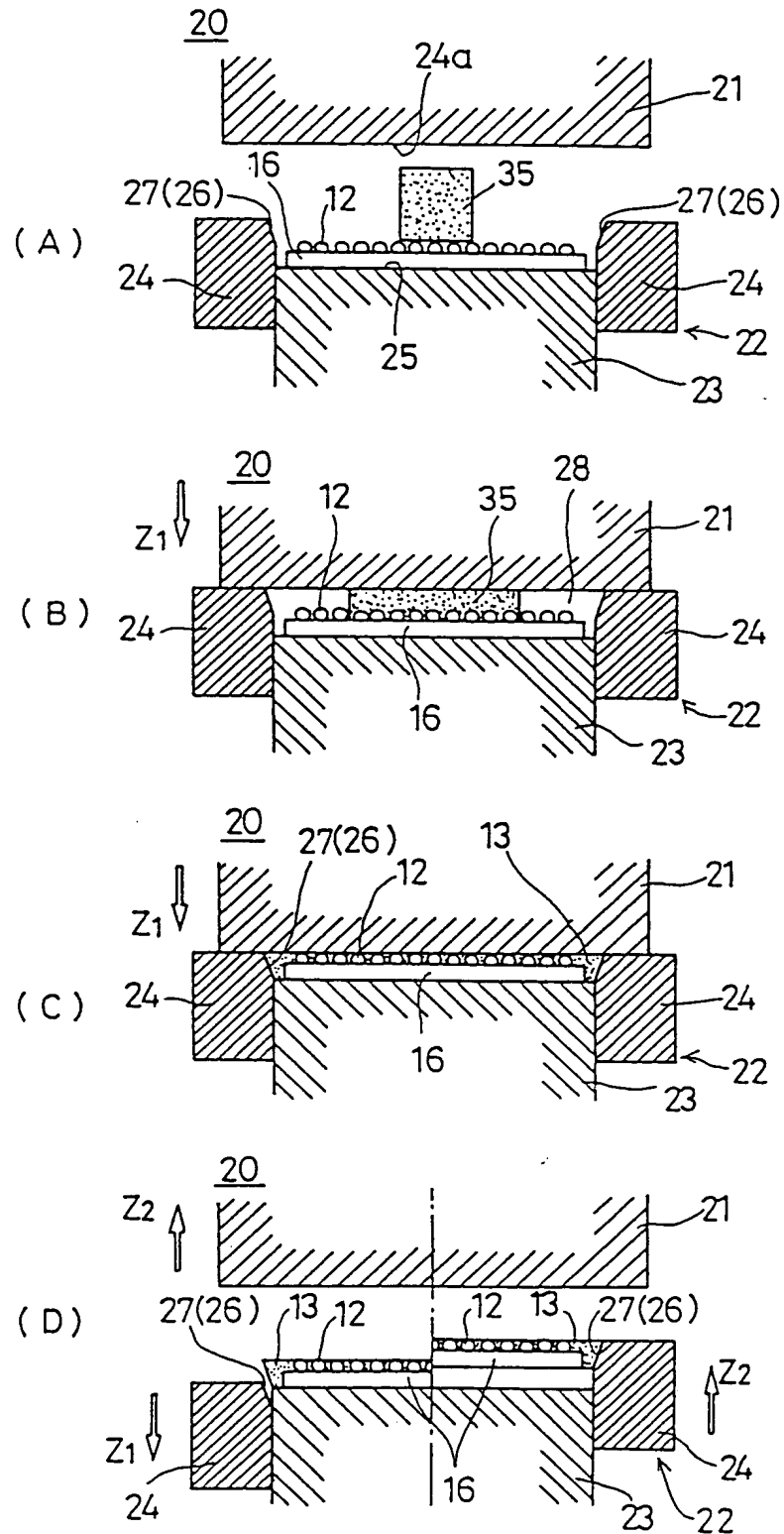


FIG. 12

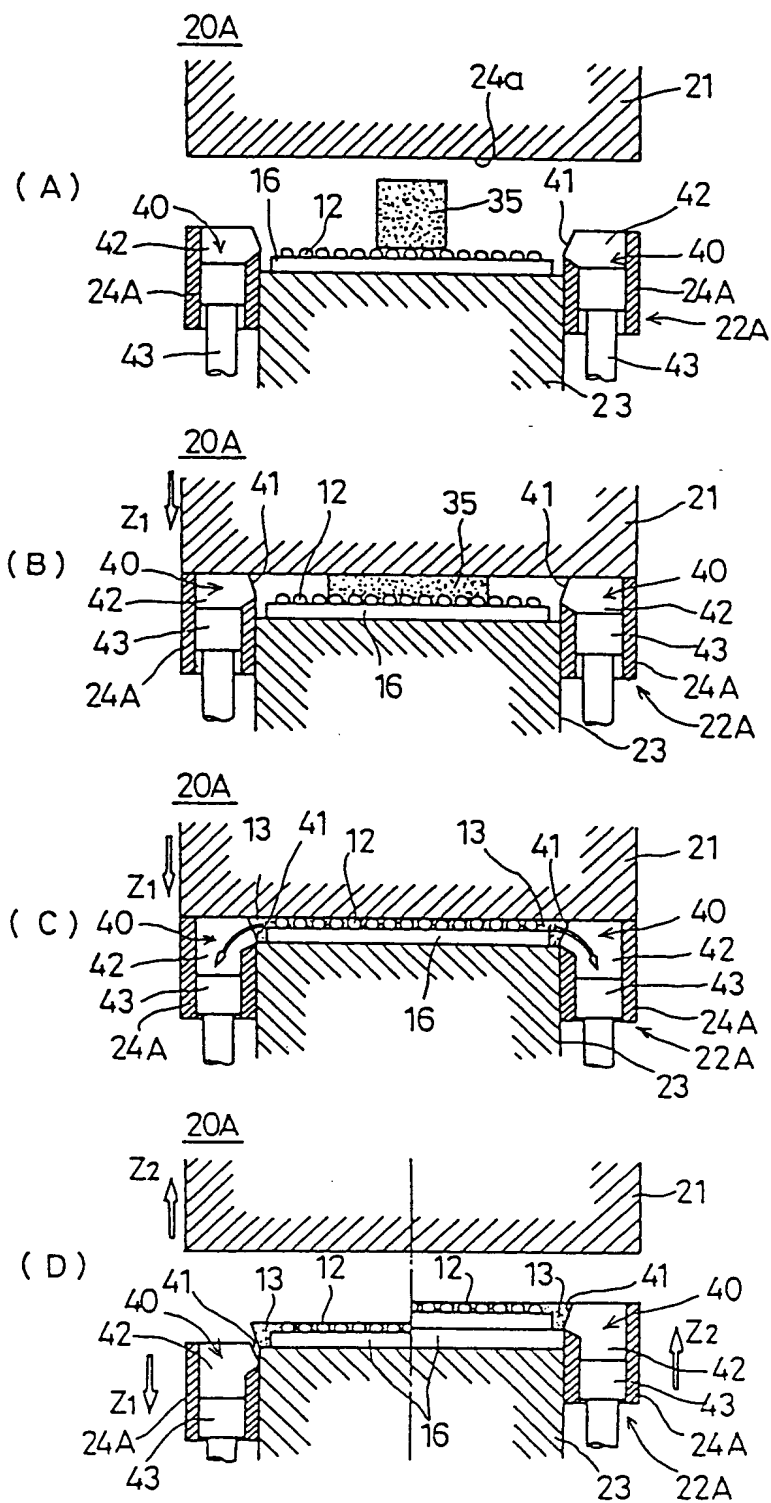


FIG. 13

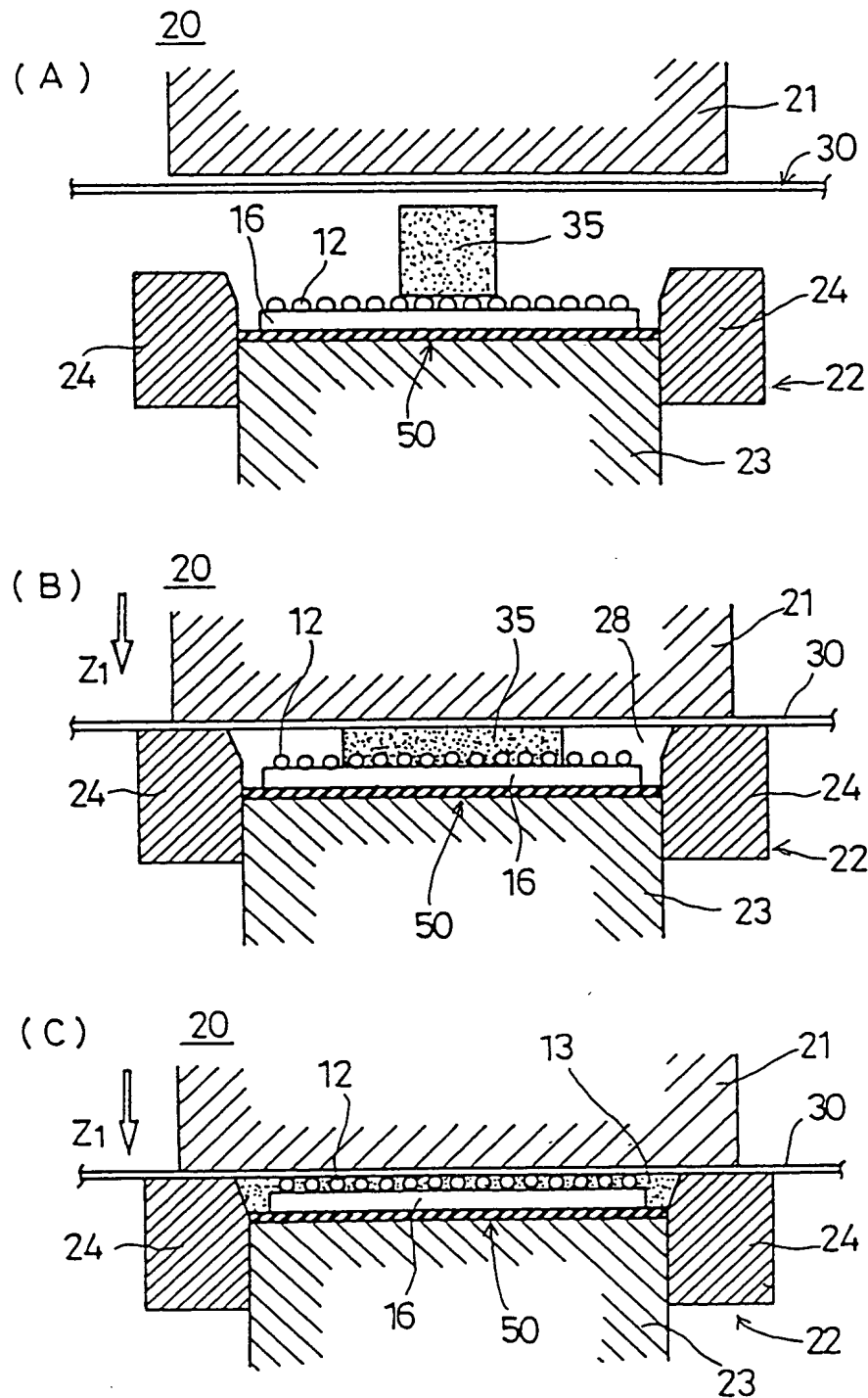


FIG. 14

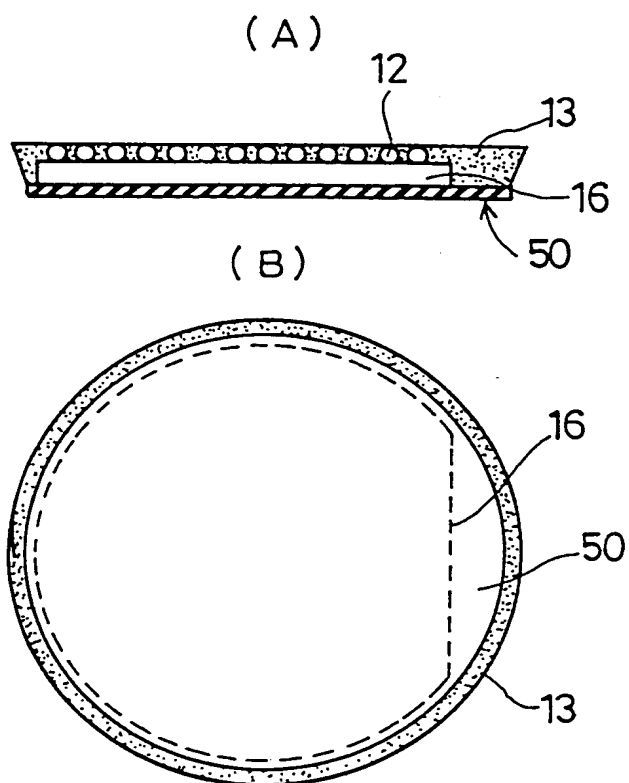


FIG. 15

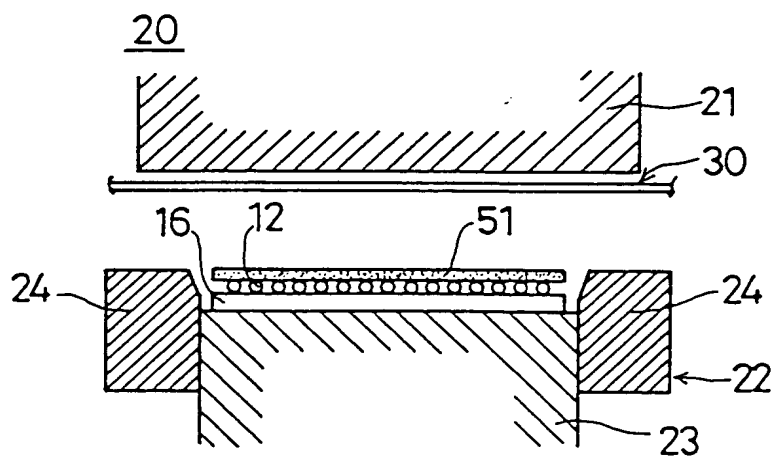


FIG. 16

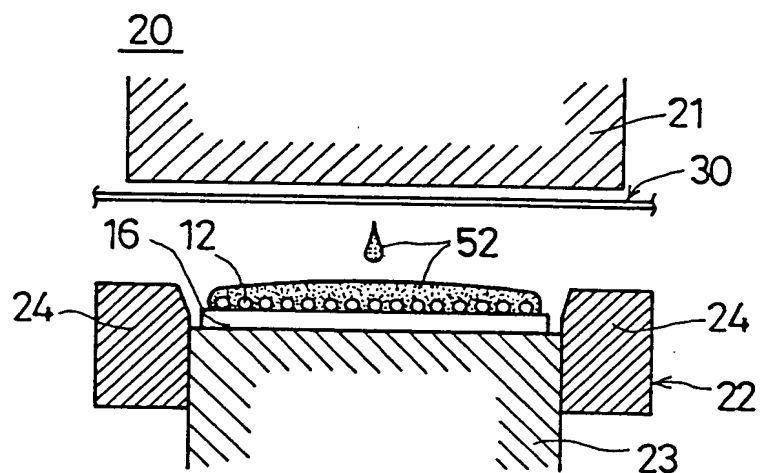


FIG. 17

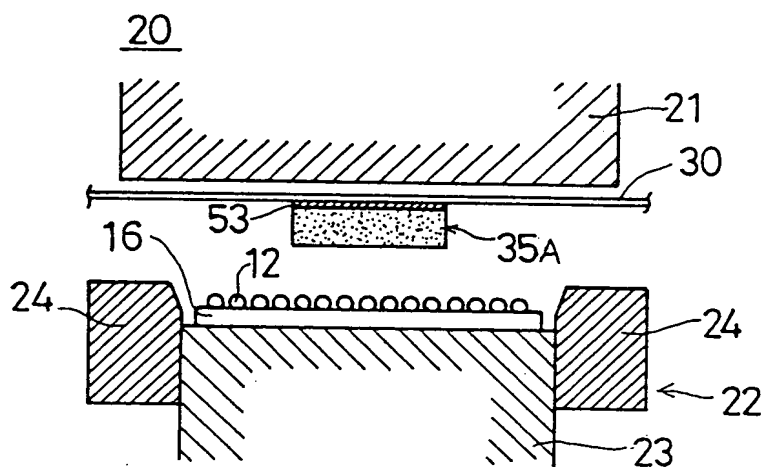






FIG. 19

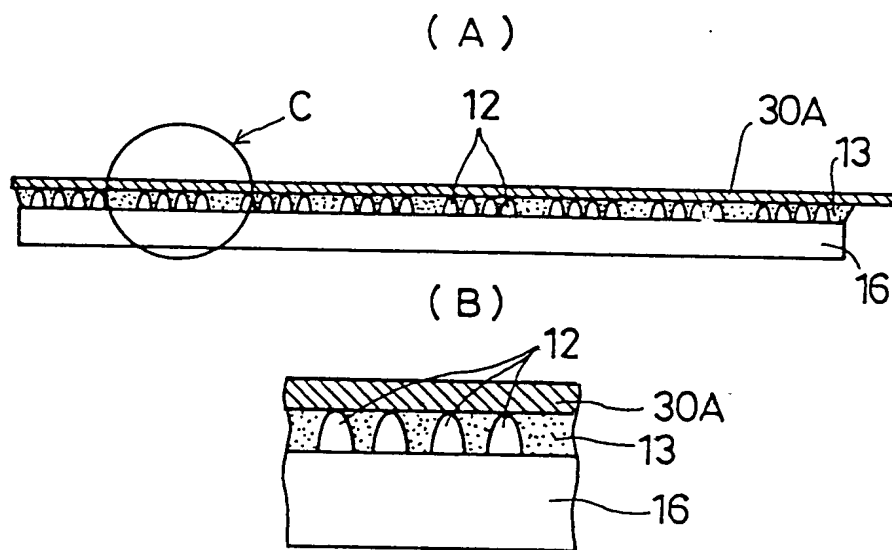


FIG. 20

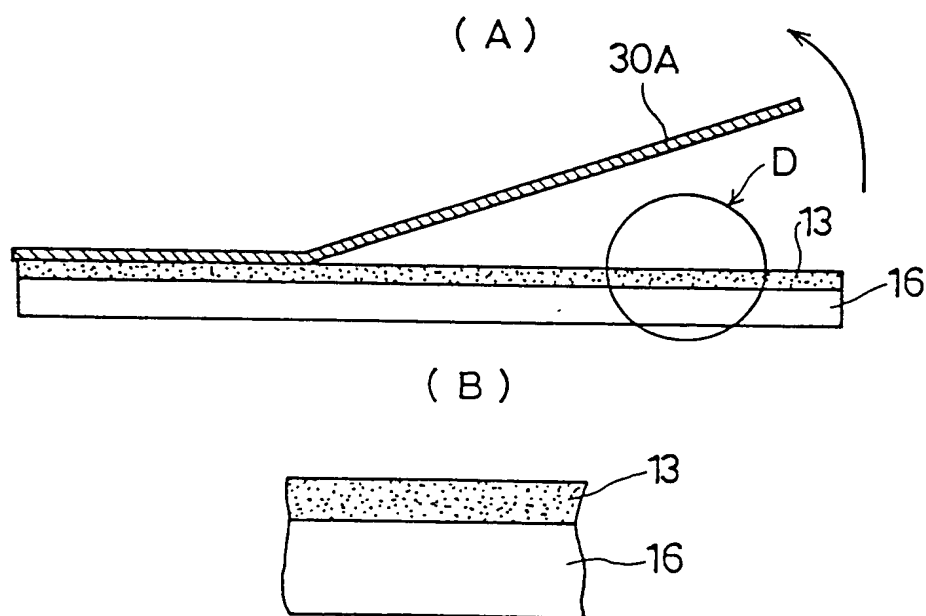


FIG. 21

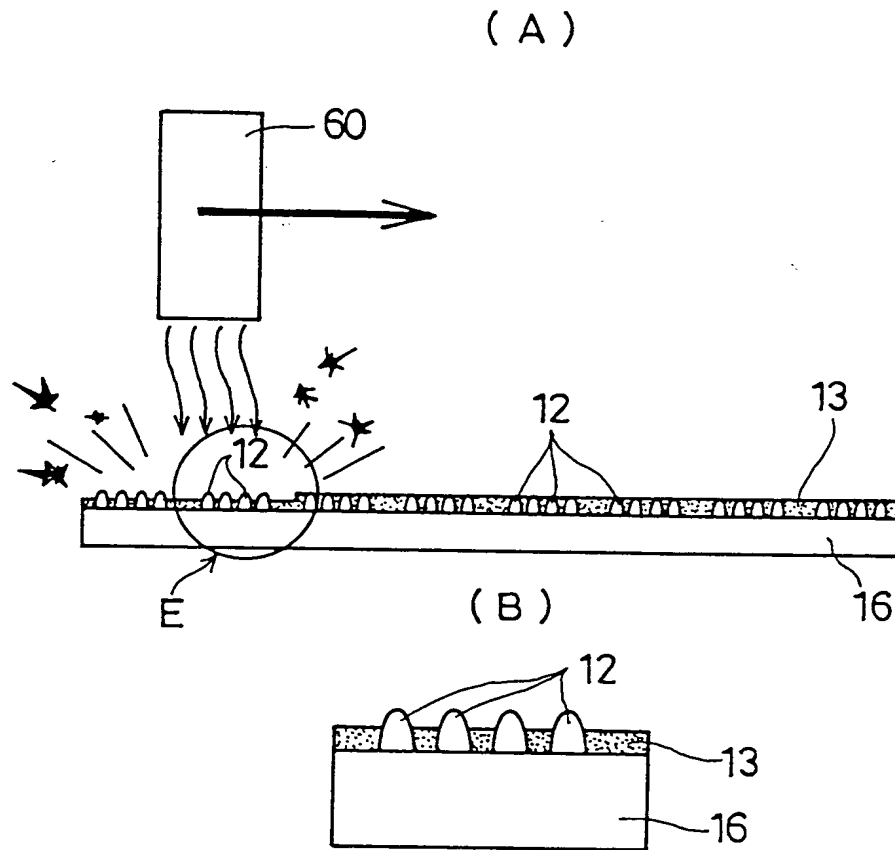


FIG. 22

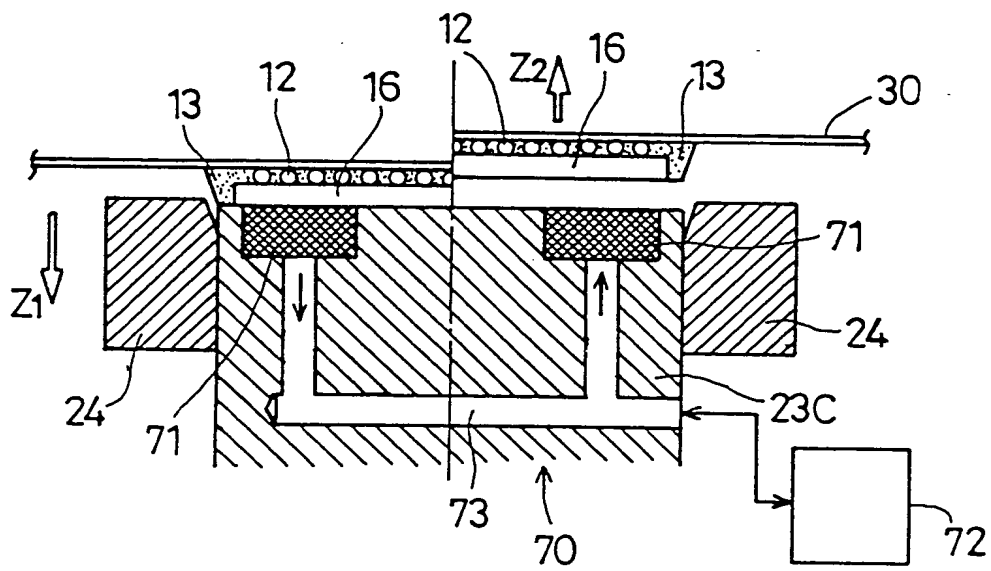
20C



FIG. 25

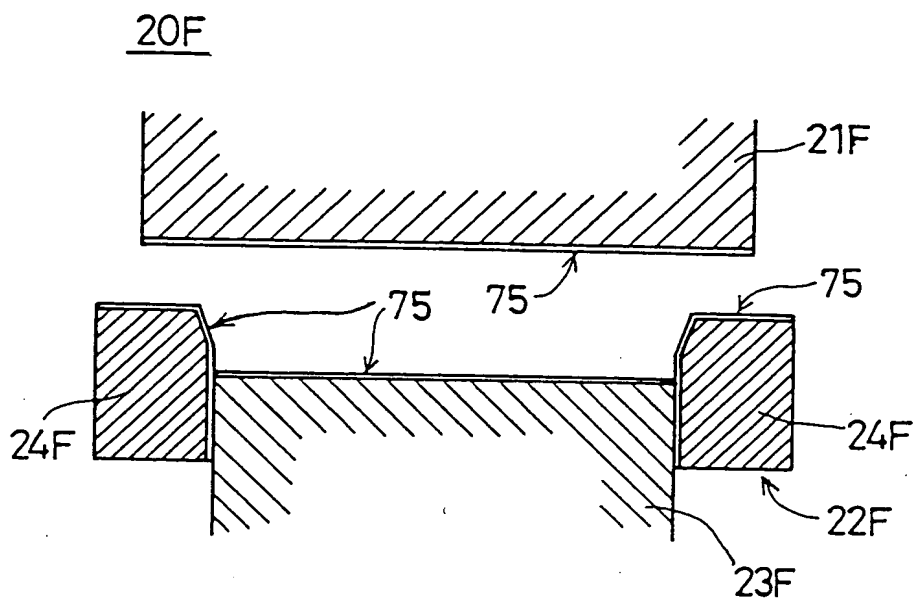


FIG. 26

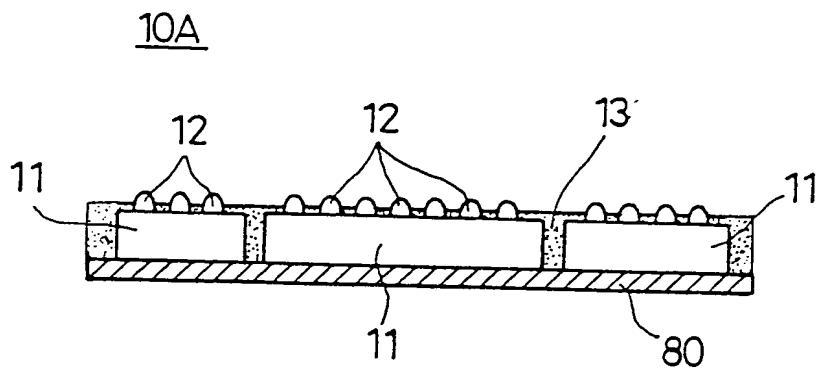
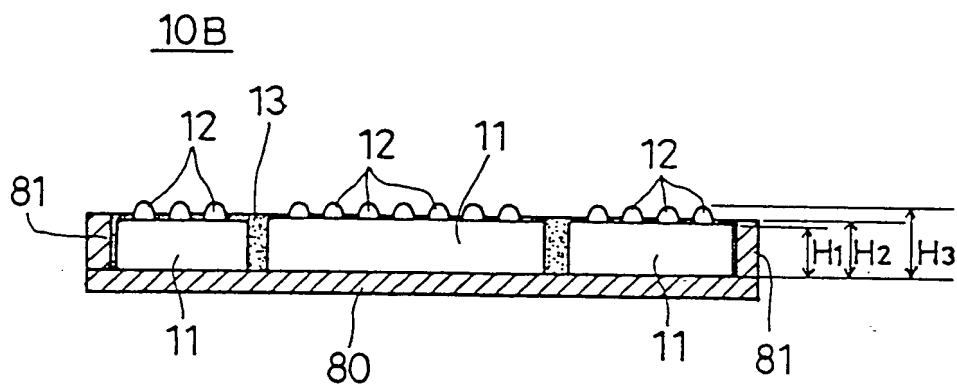


FIG. 27



66730-60962000

FIG. 28

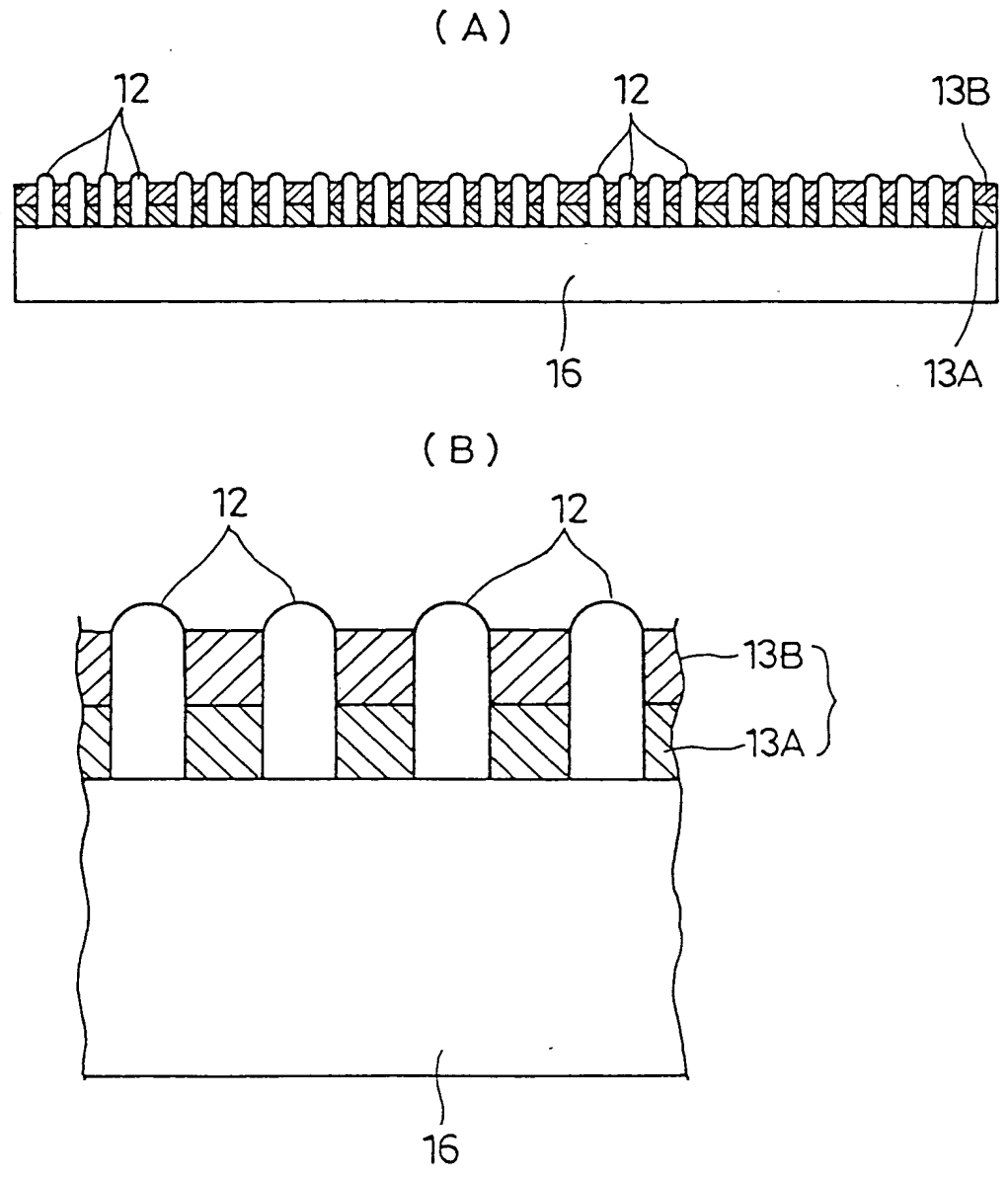


FIG. 29

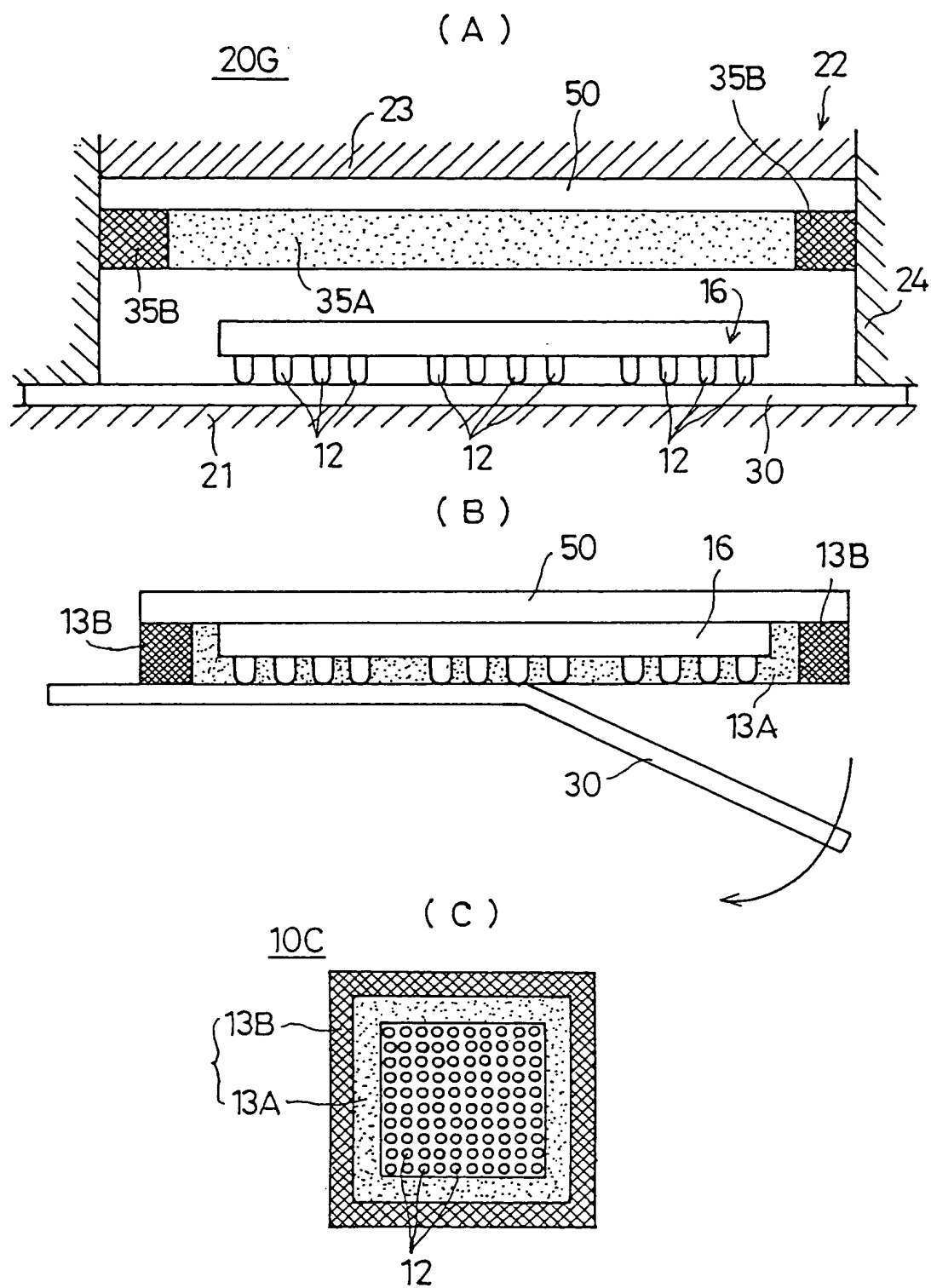
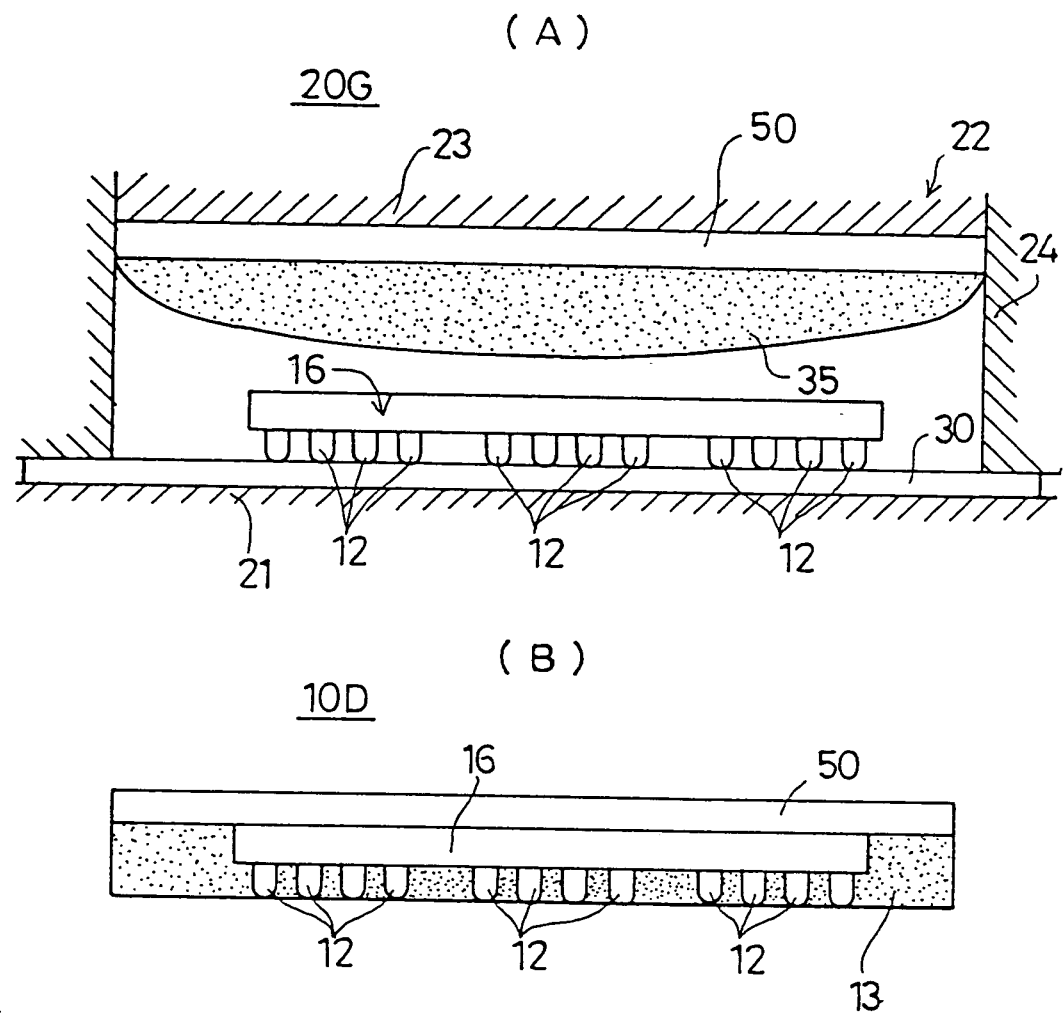




FIG. 30



665730" 6096200

FIG. 31

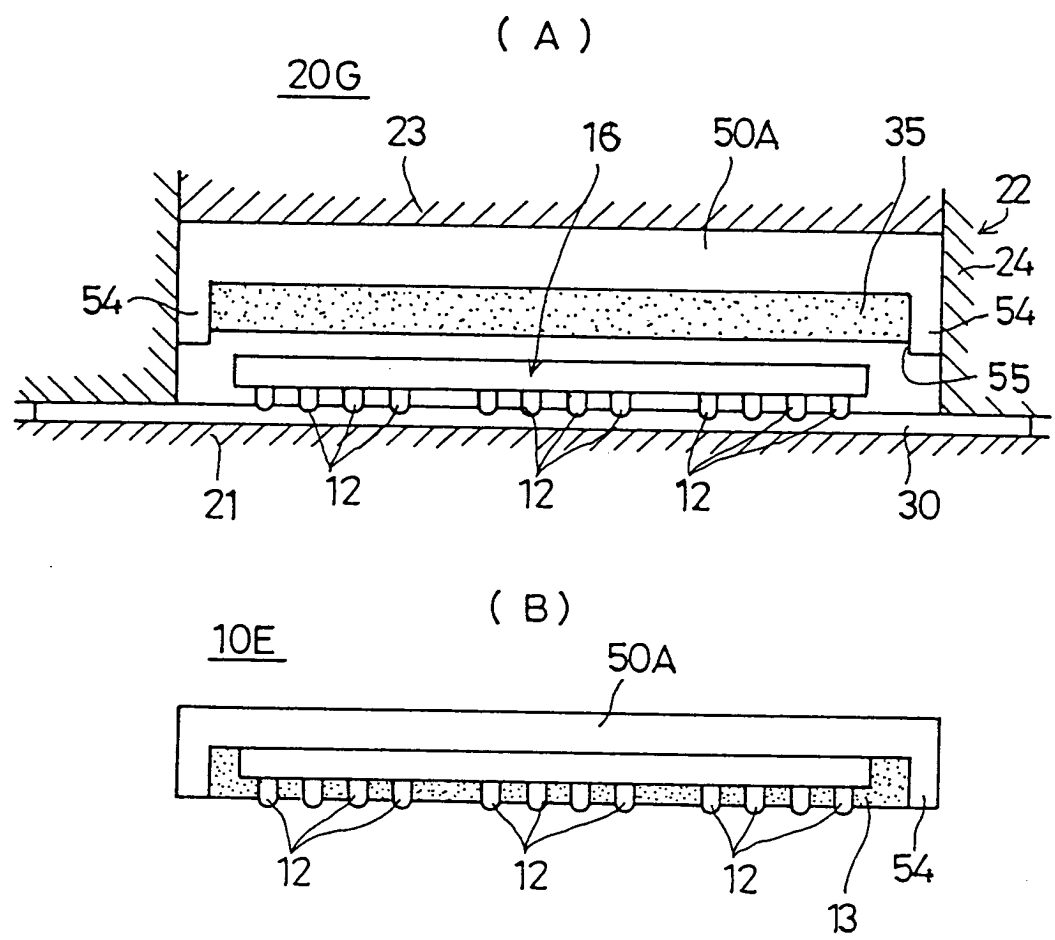


FIG. 32

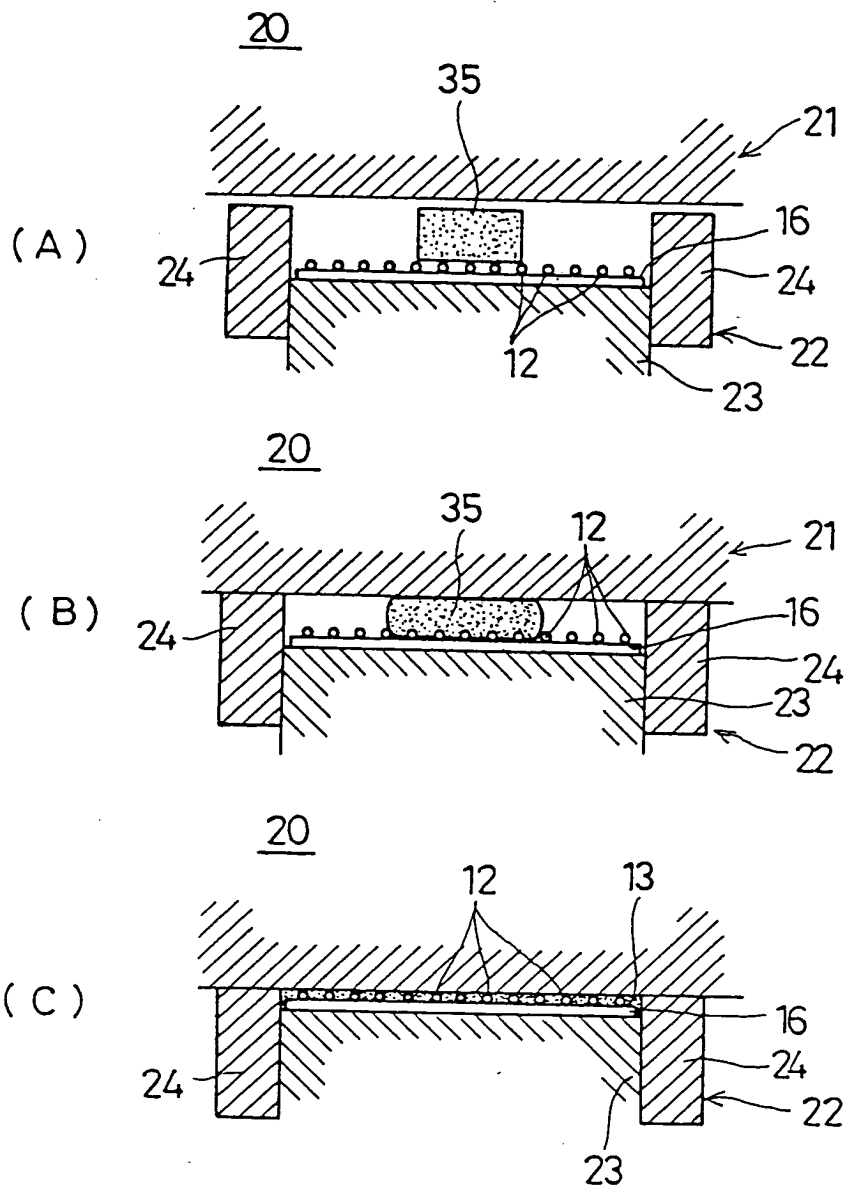


FIG. 33

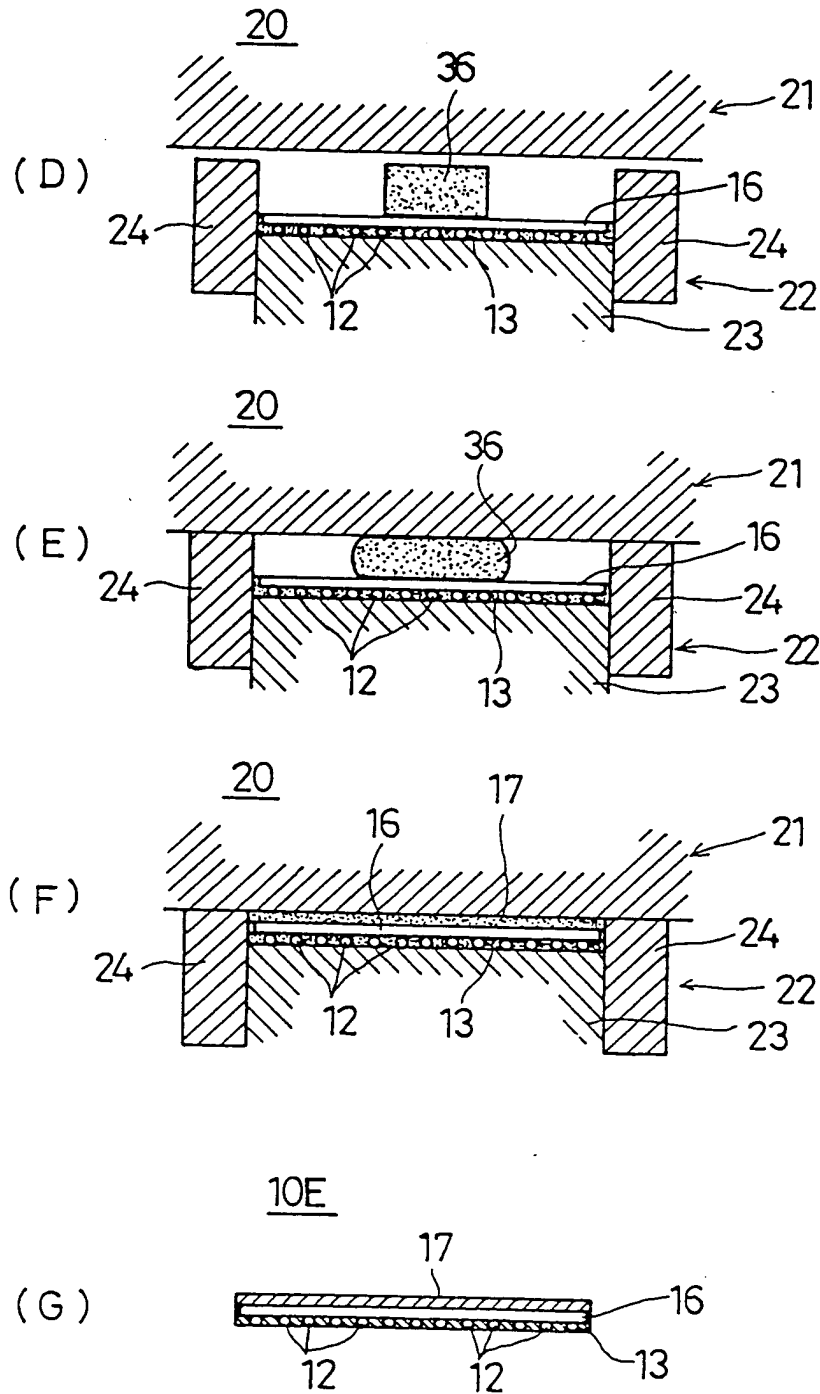


FIG. 34

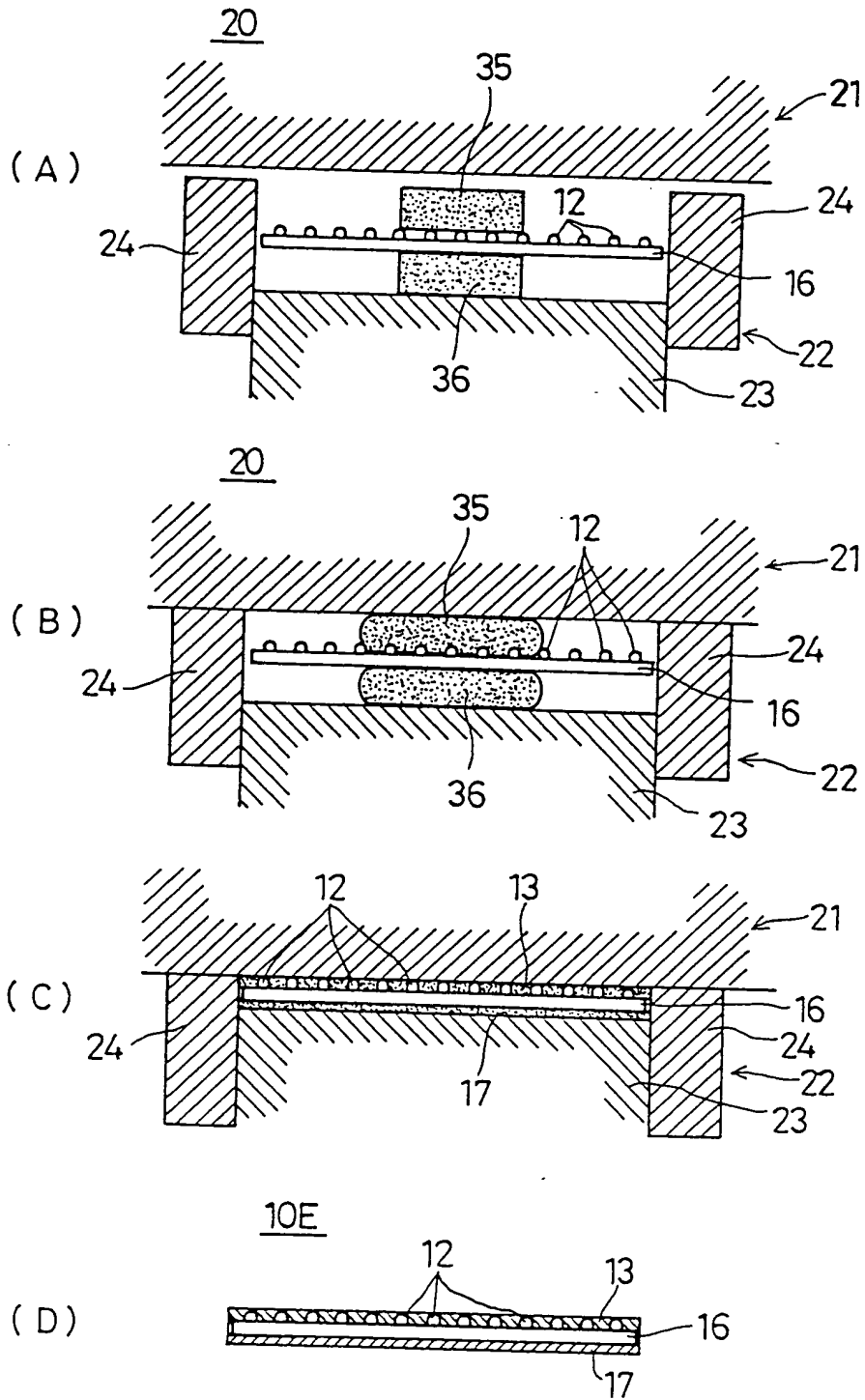


FIG. 35

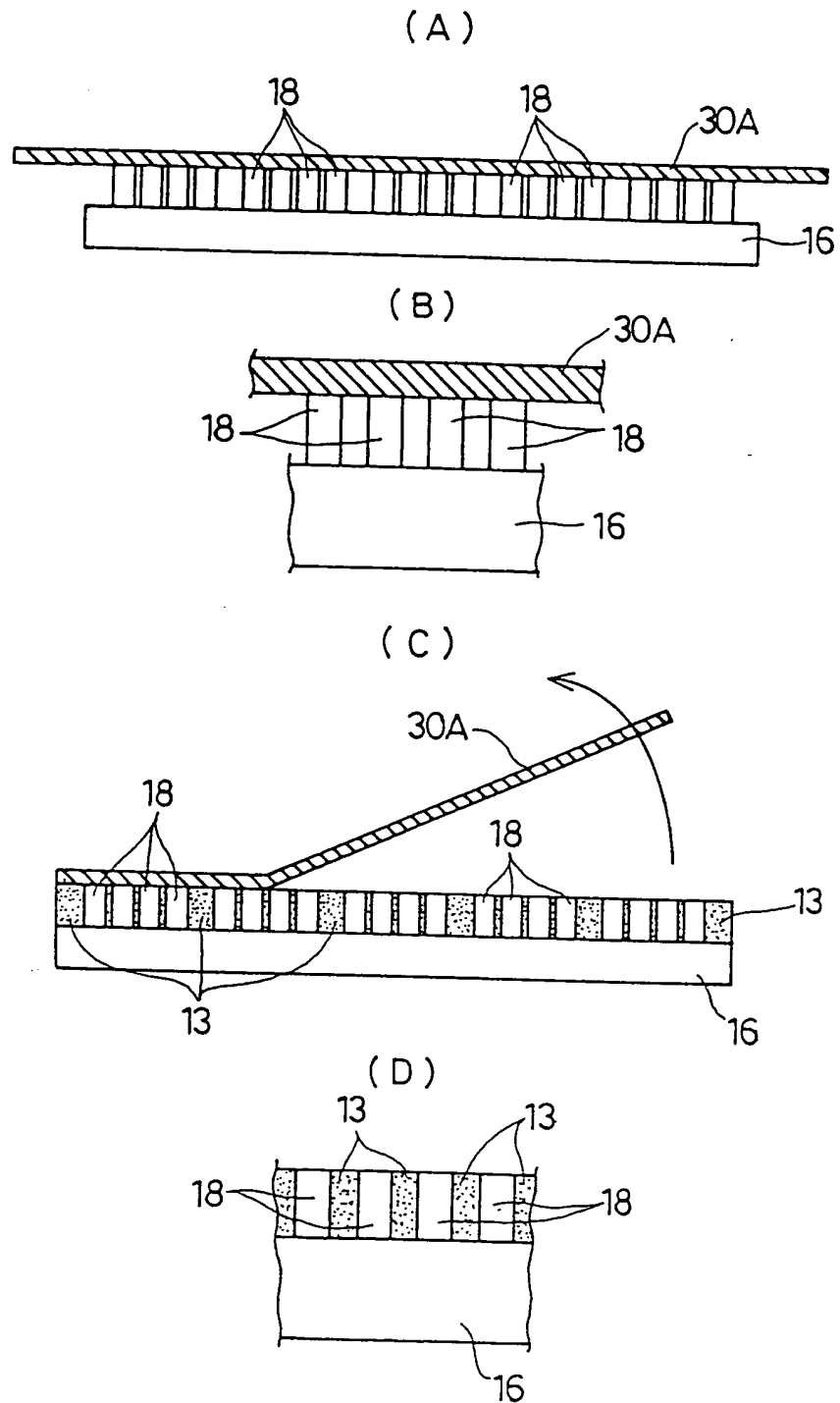


FIG. 36

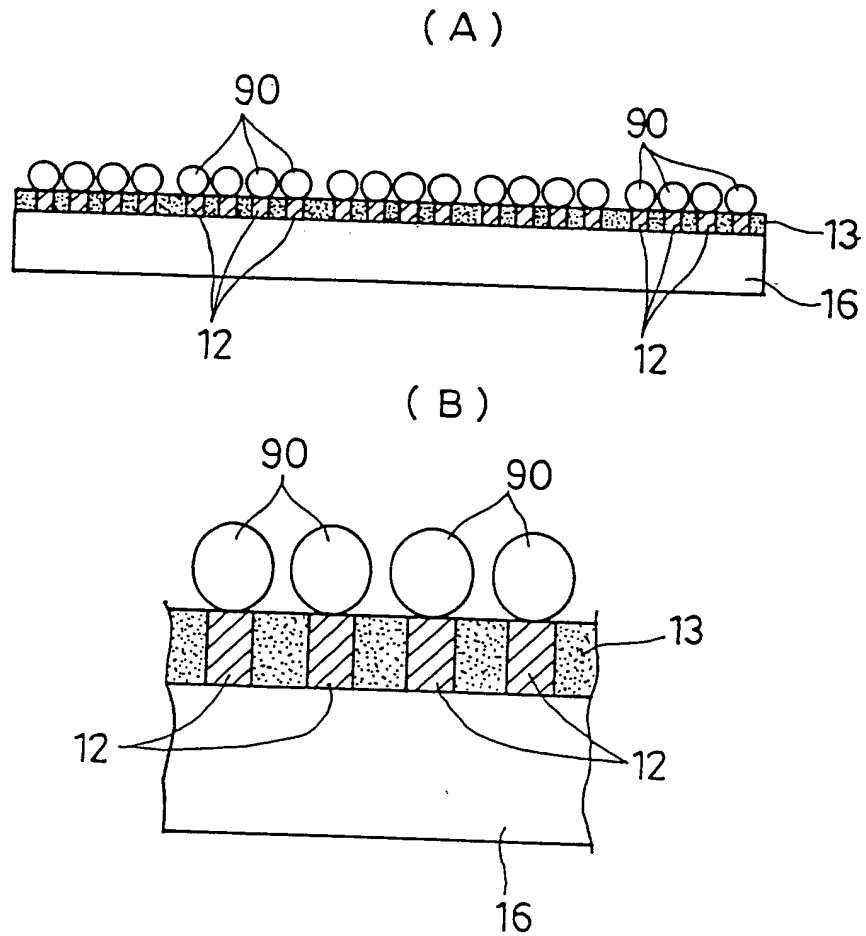
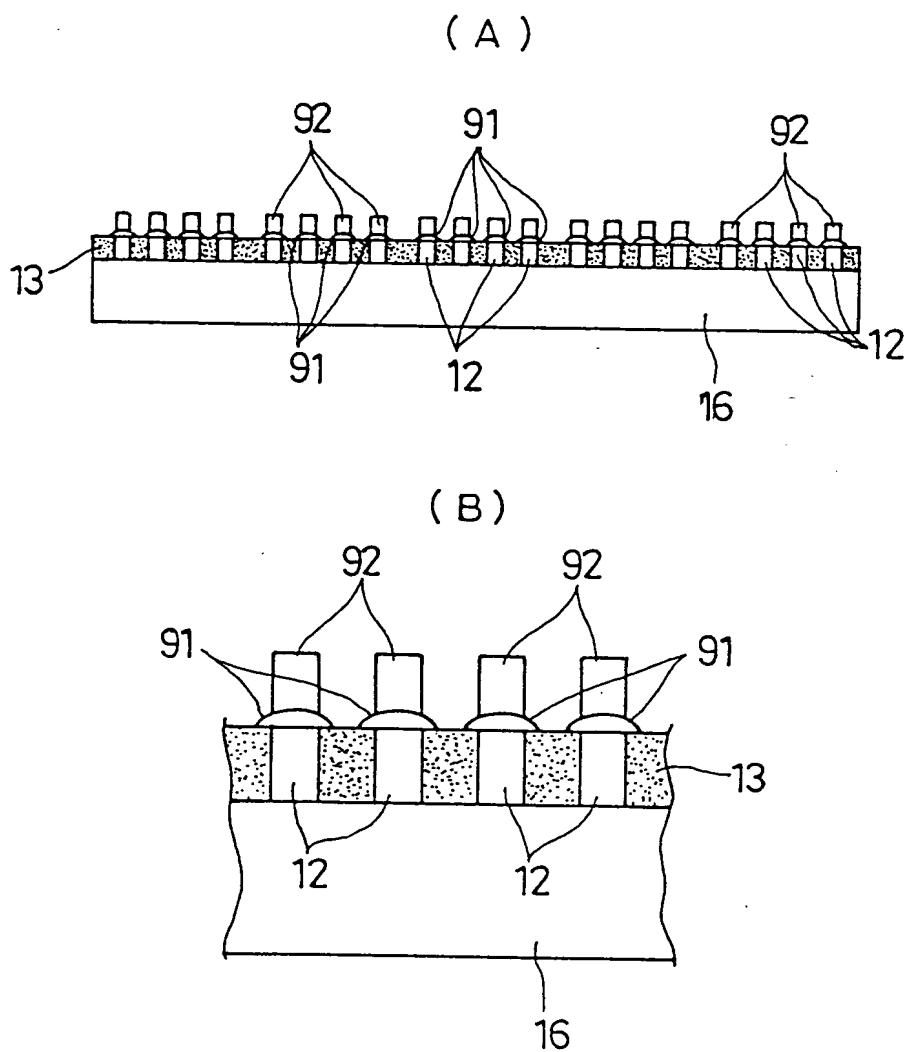


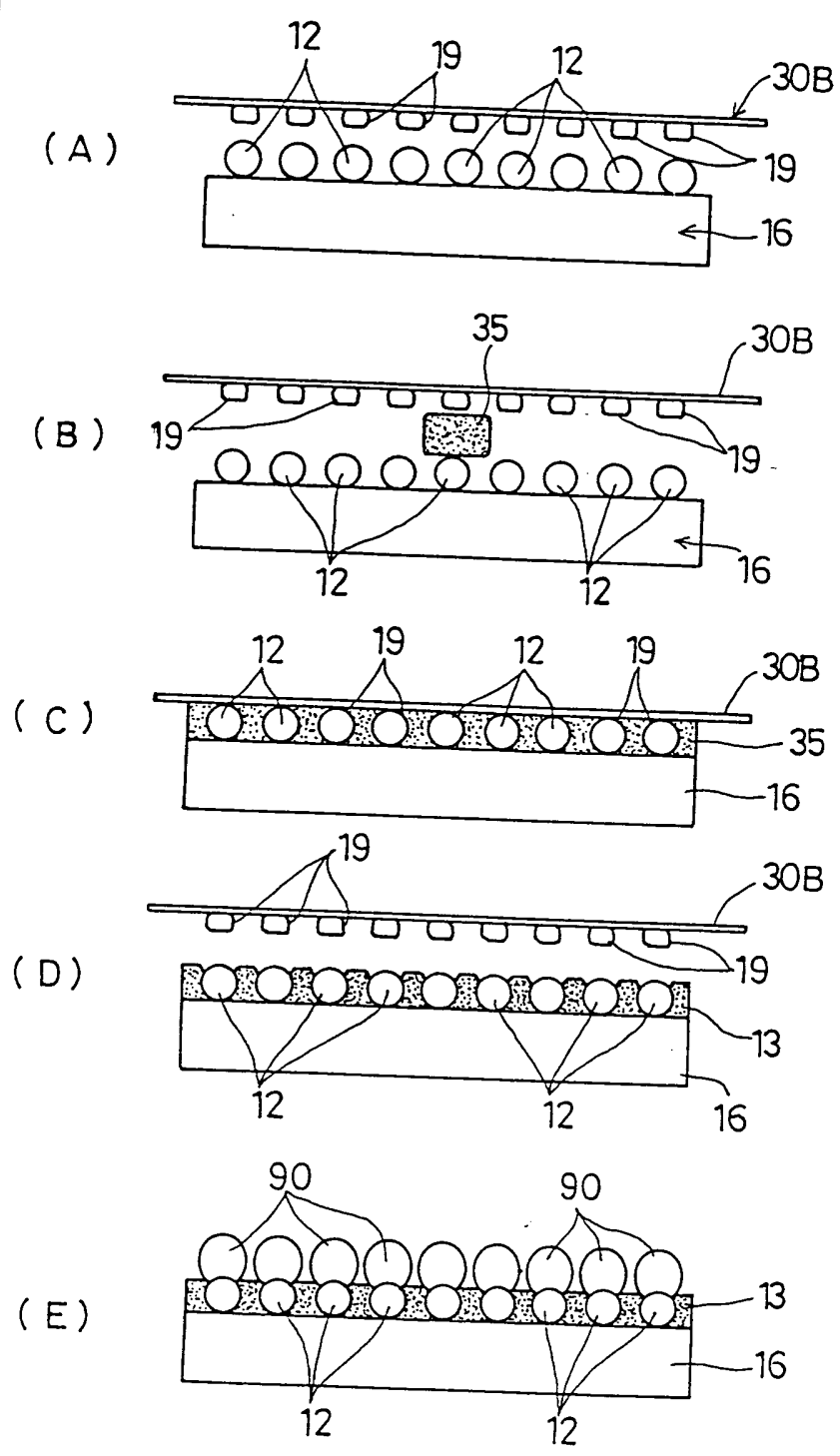
FIG. 37





33/131

FIG. 38



643130" 80362060

FIG. 39

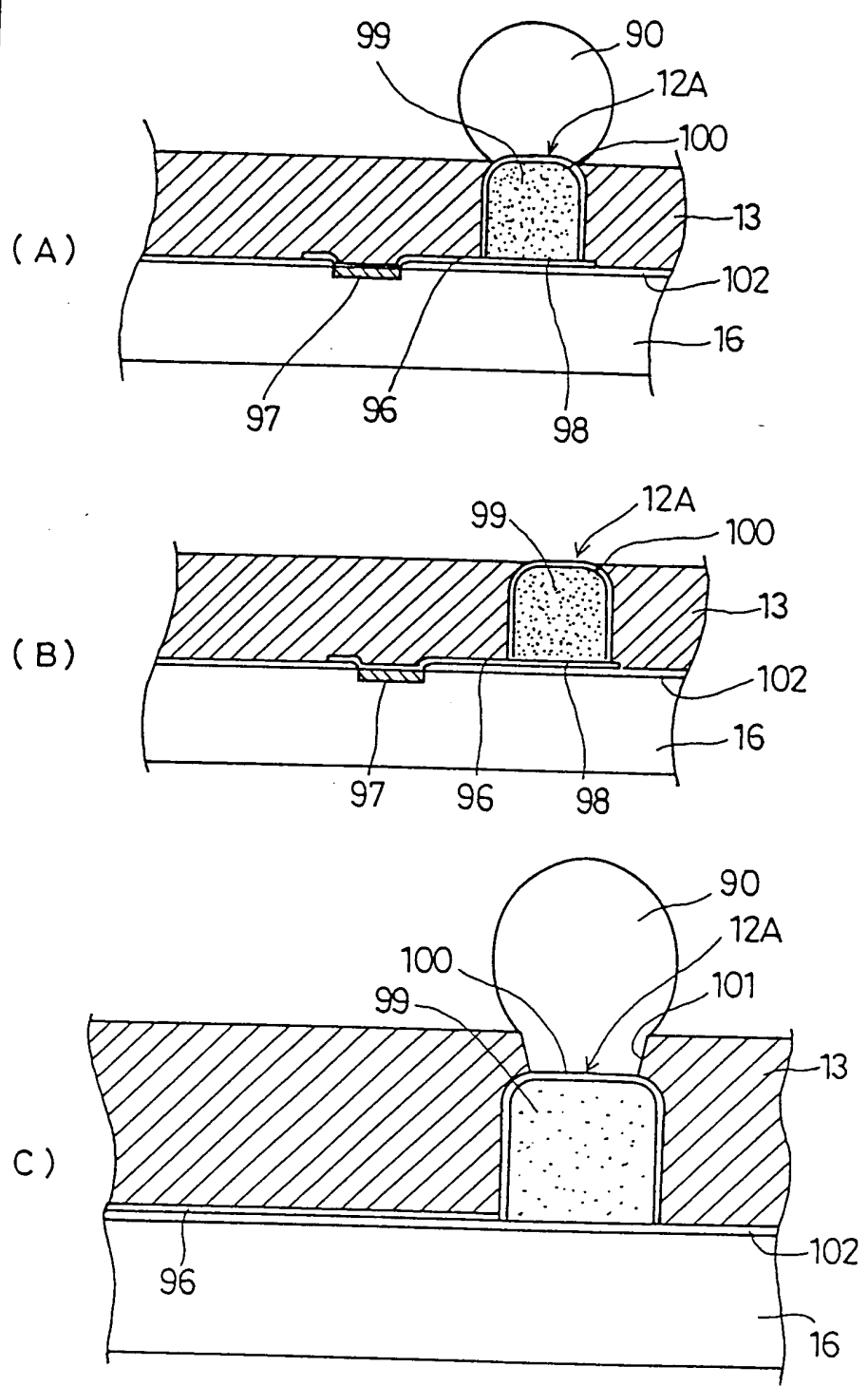
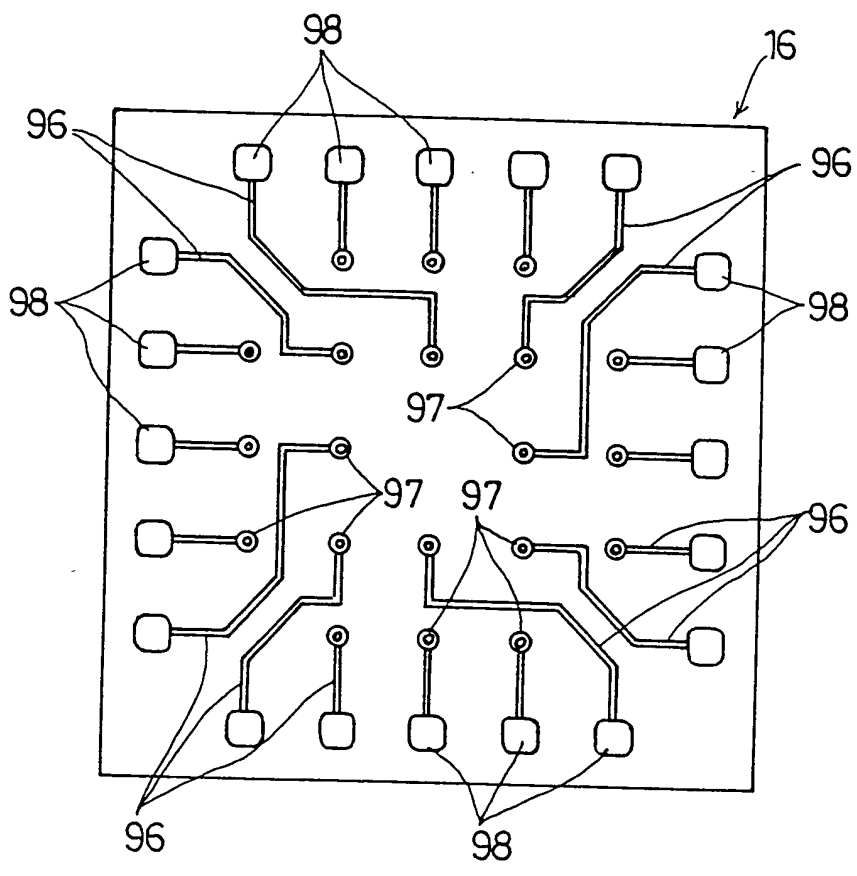


FIG. 40



097029601

FIG. 41

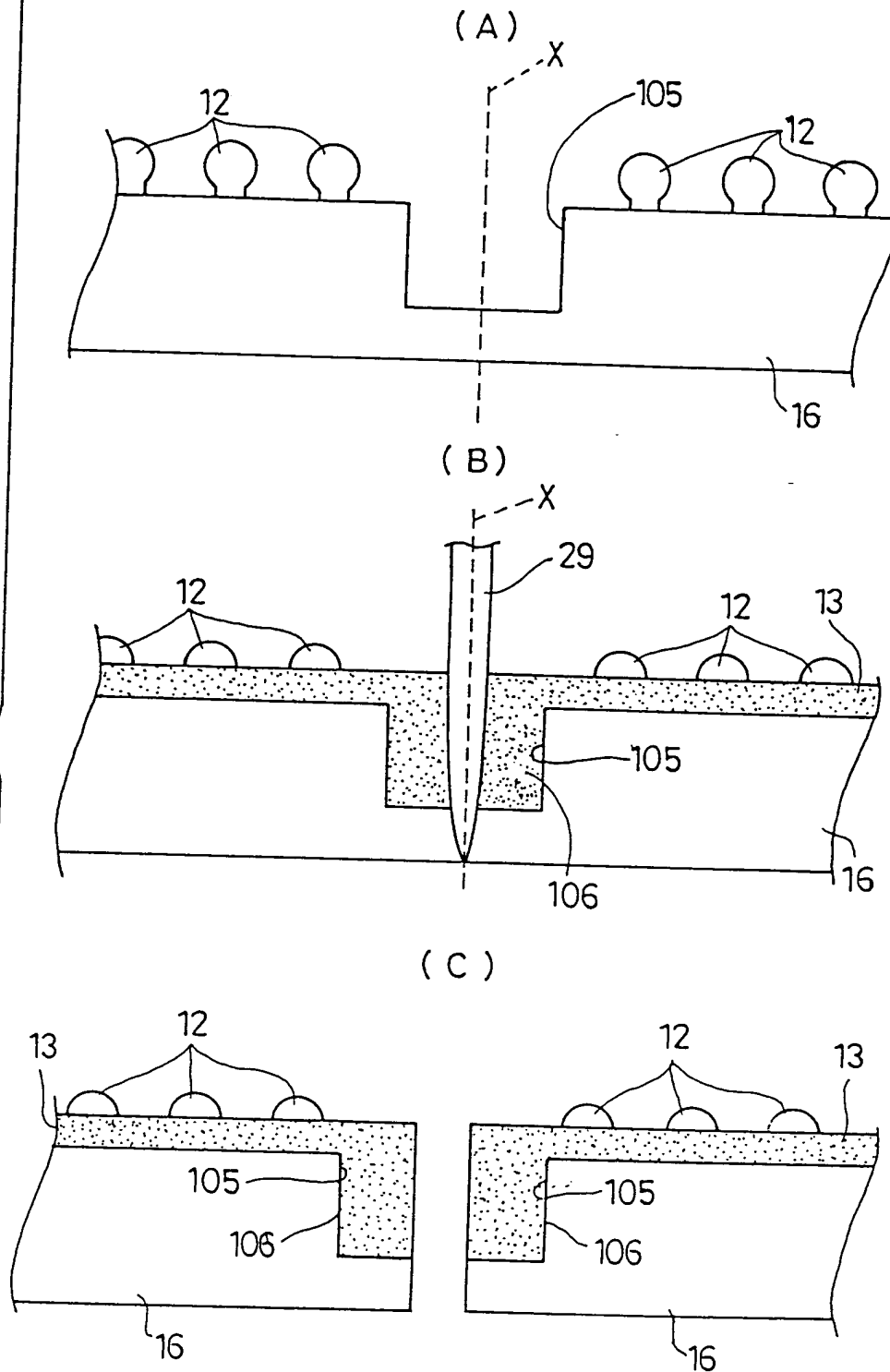


FIG. 42

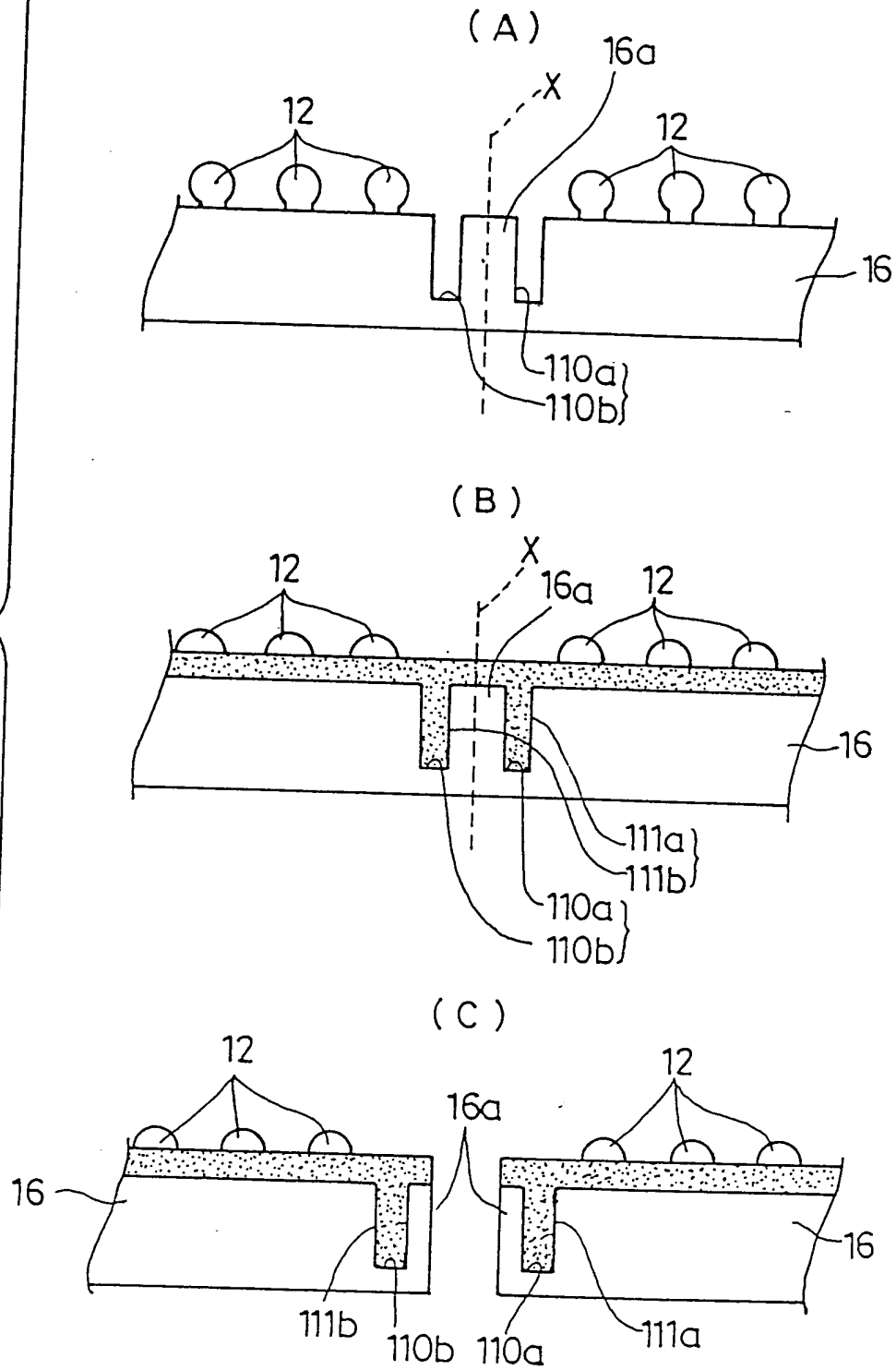


FIG. 43

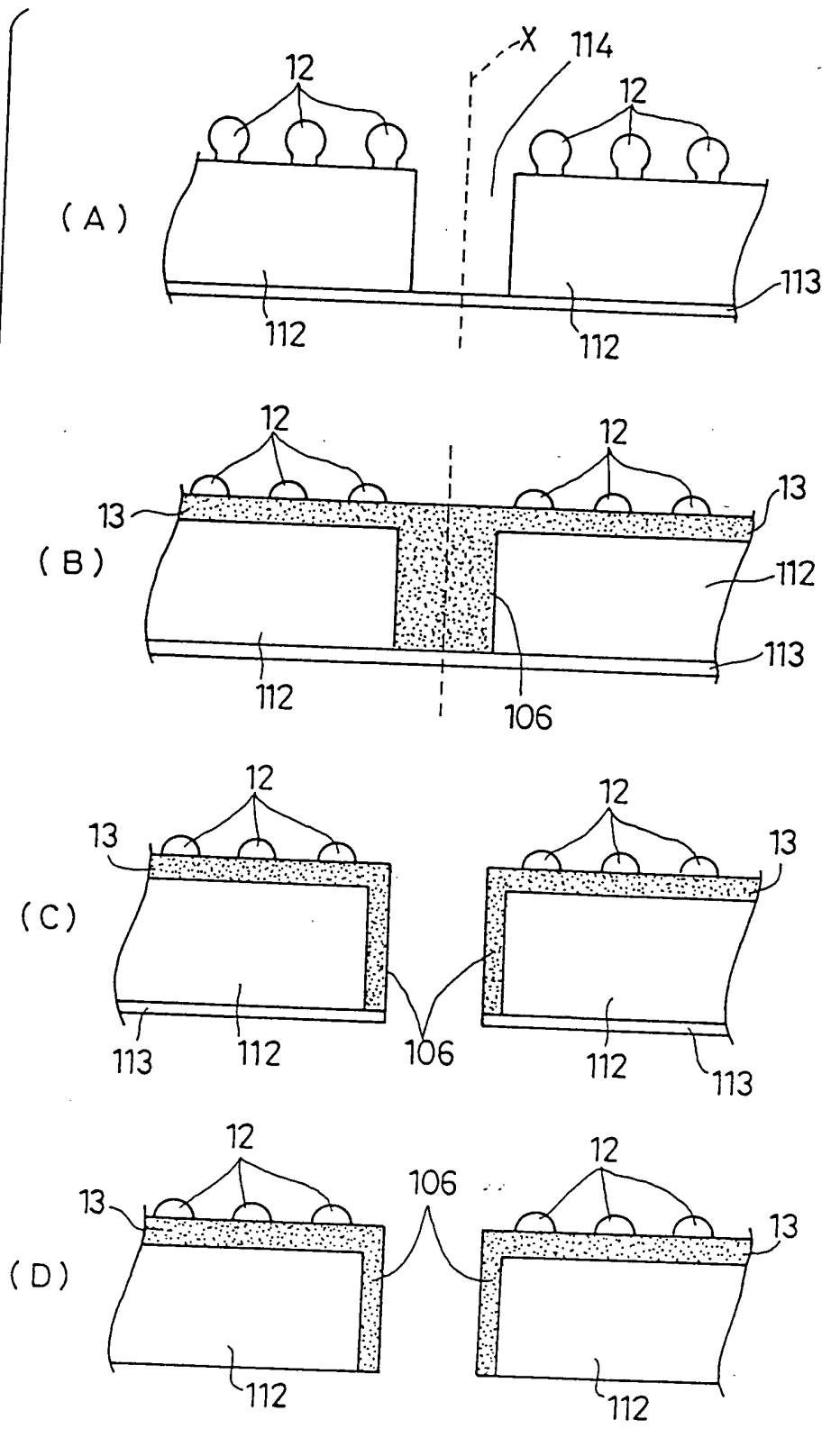


FIG. 44

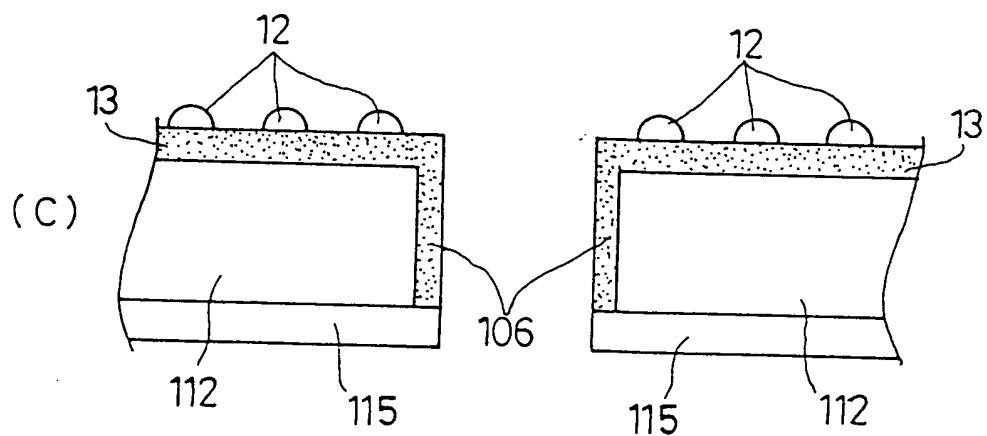
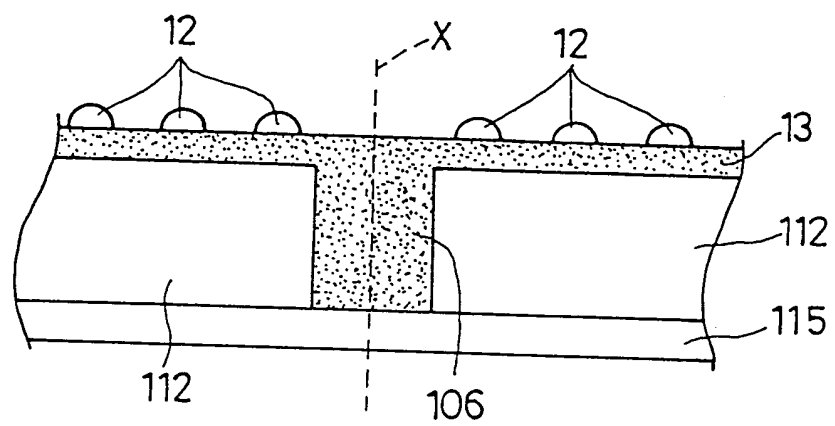
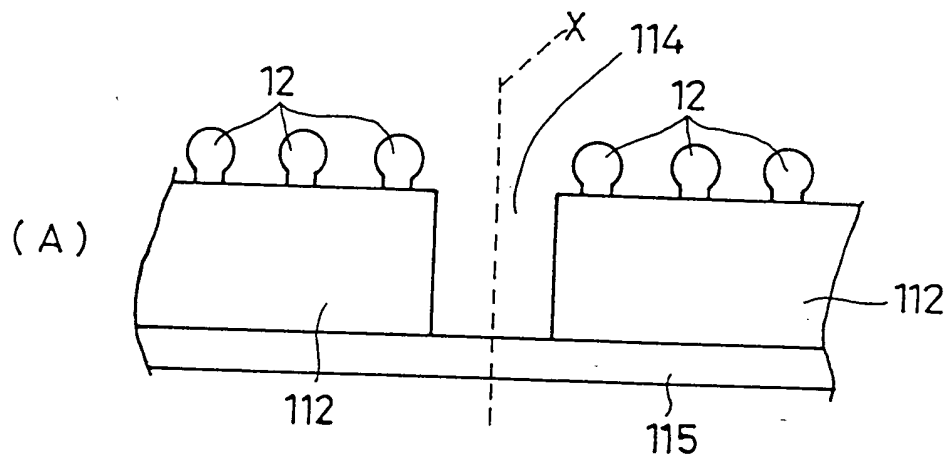


FIG. 45

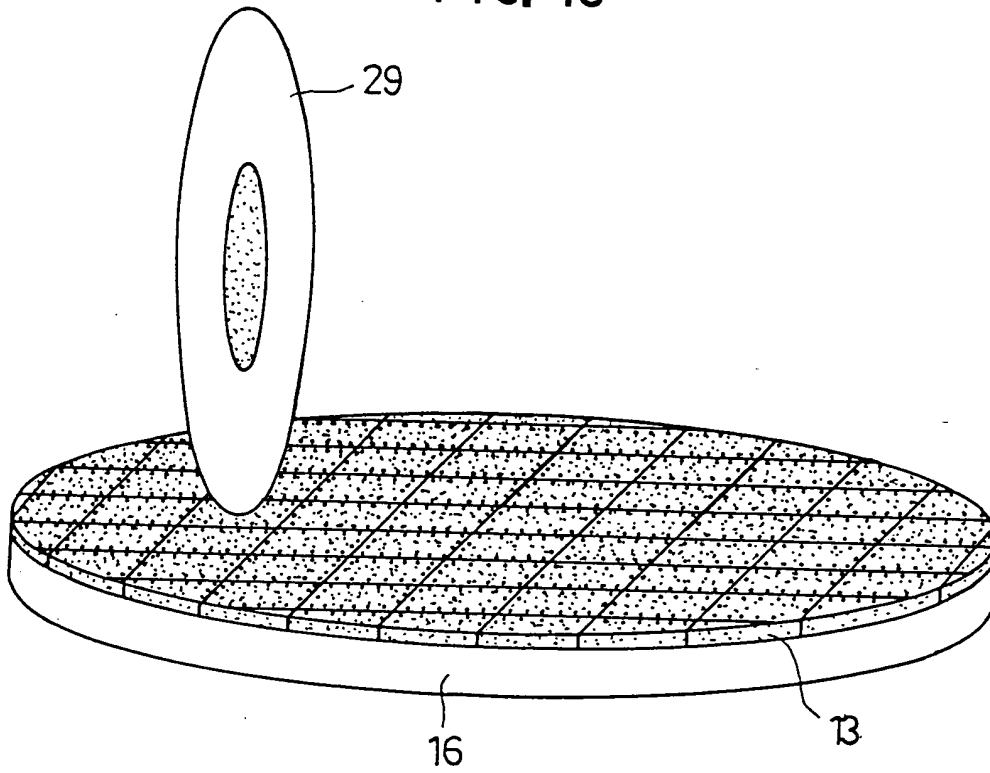


FIG. 46

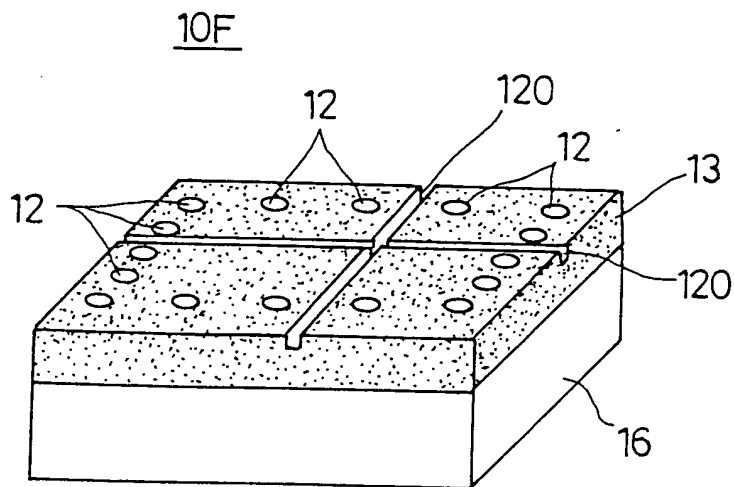




FIG. 47

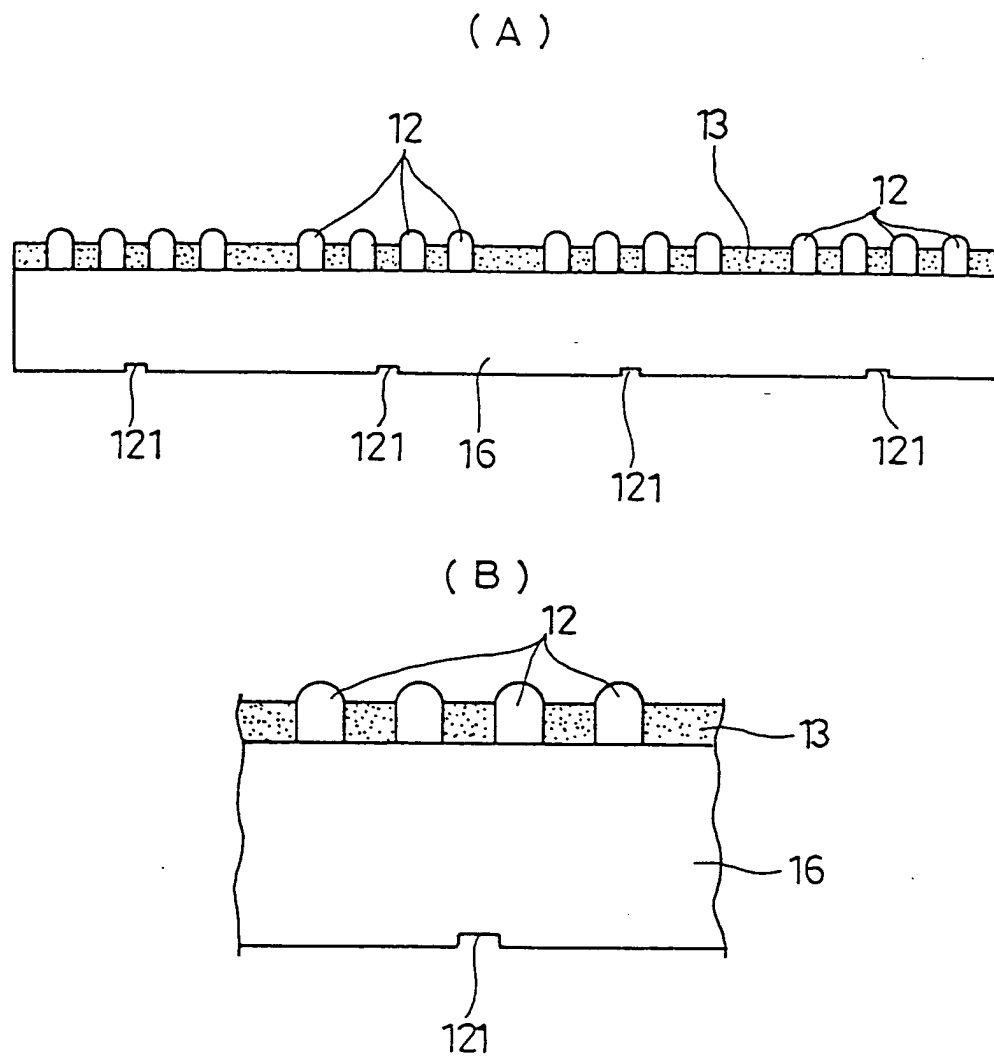


FIG. 48

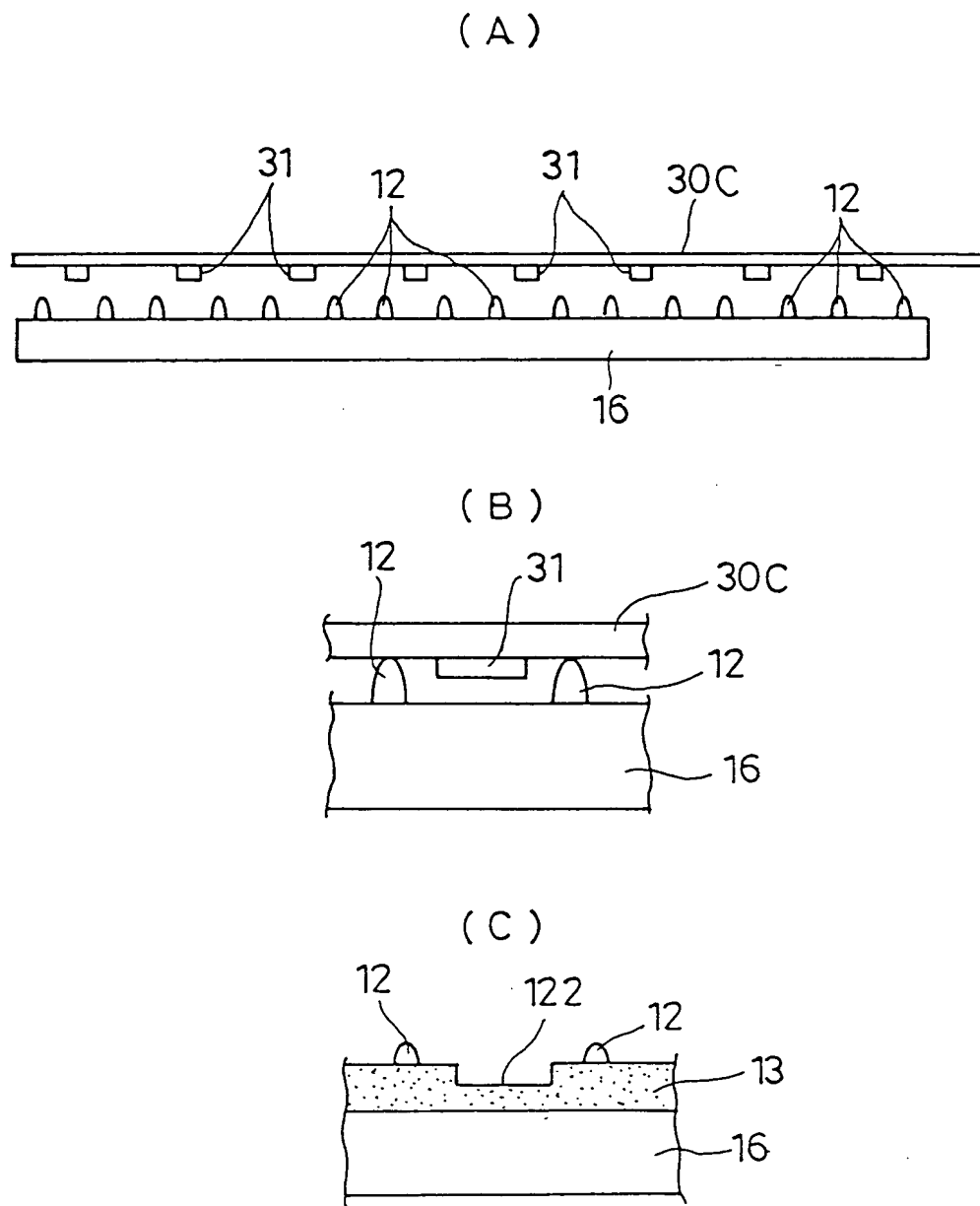


FIG. 49

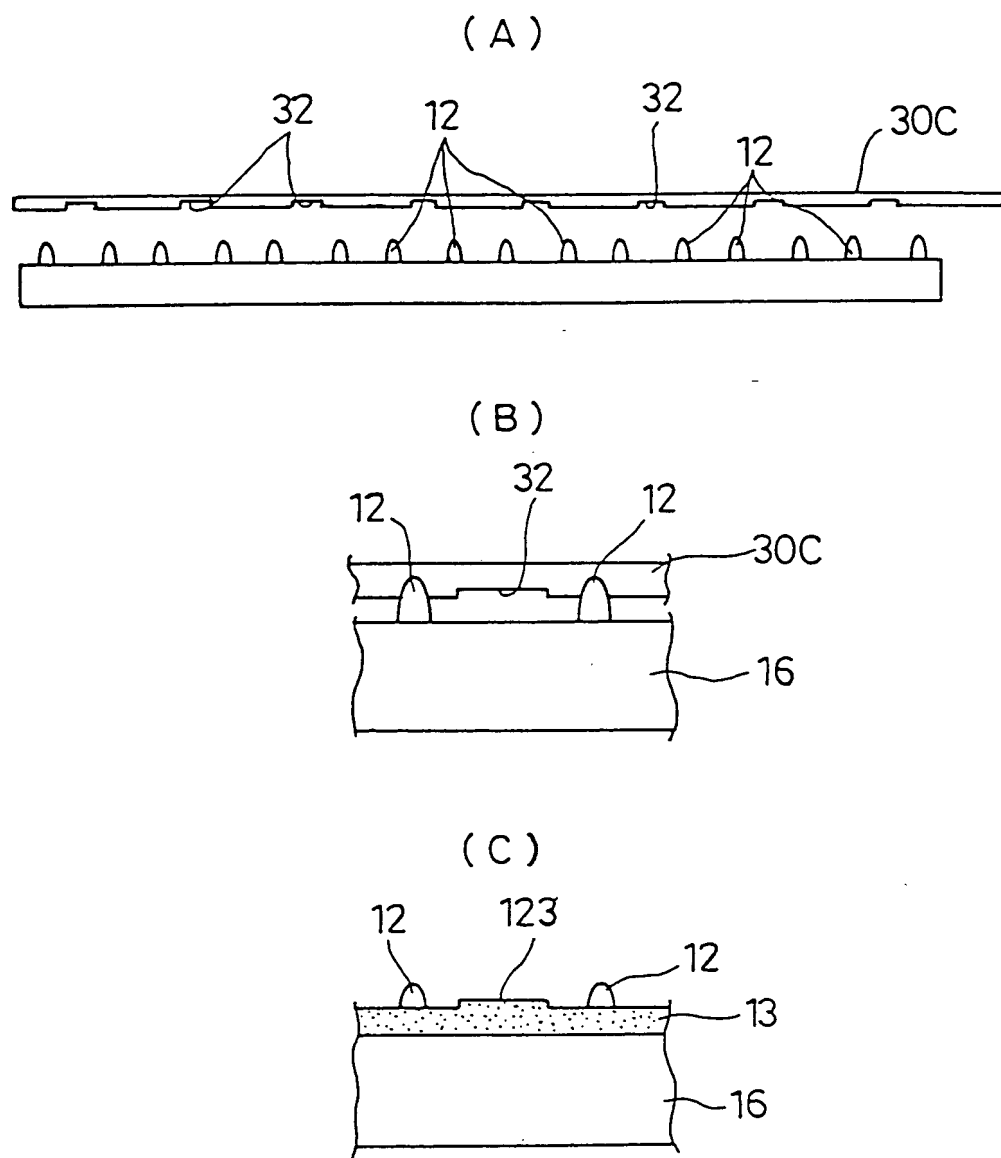
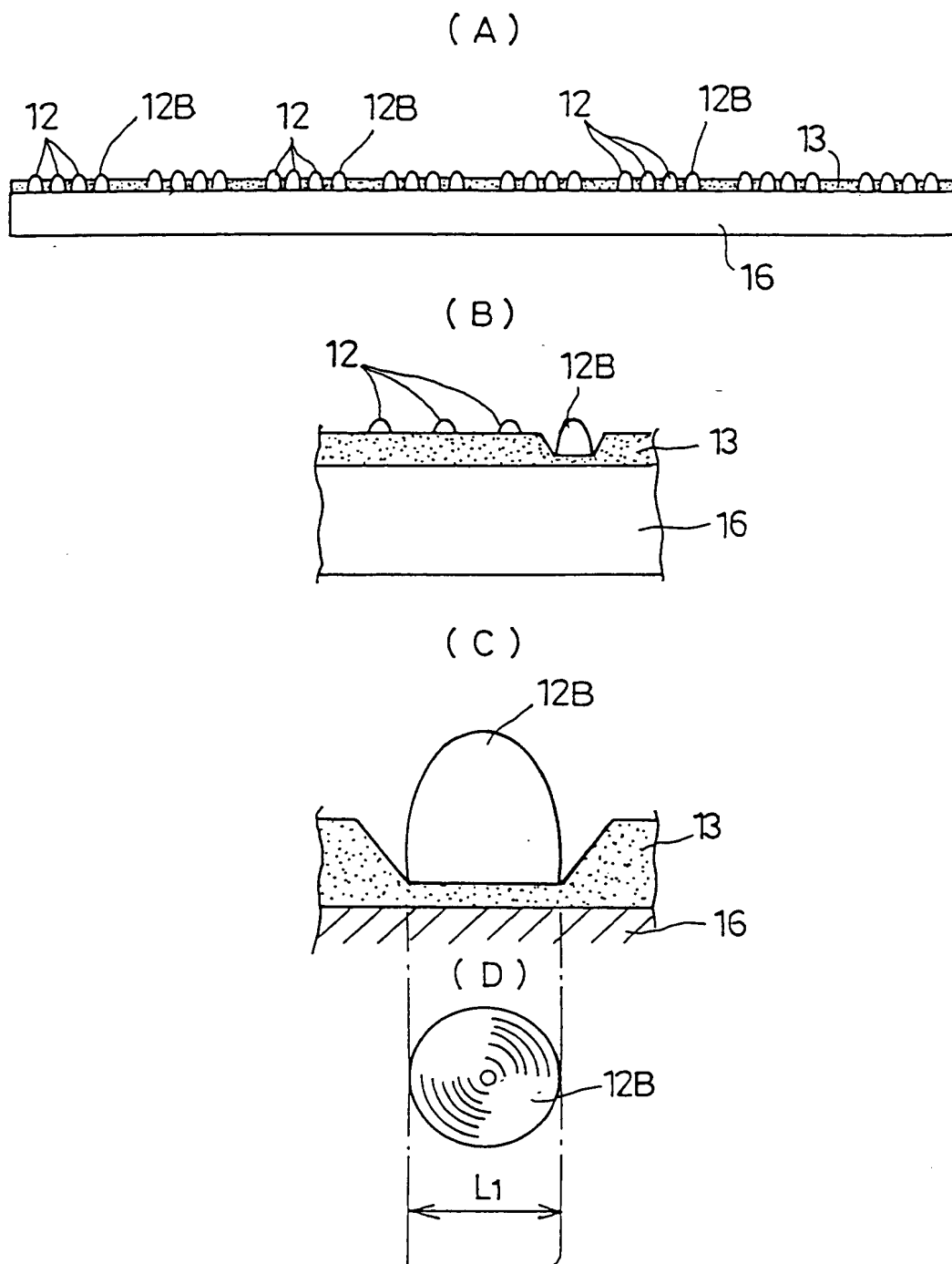


FIG. 50



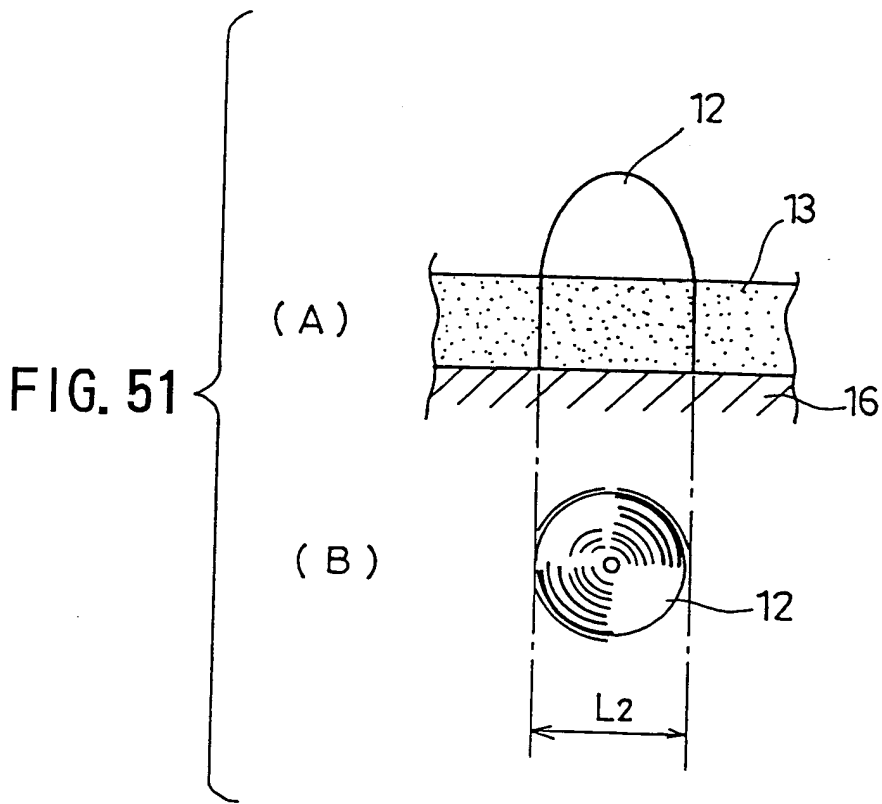


FIG. 52

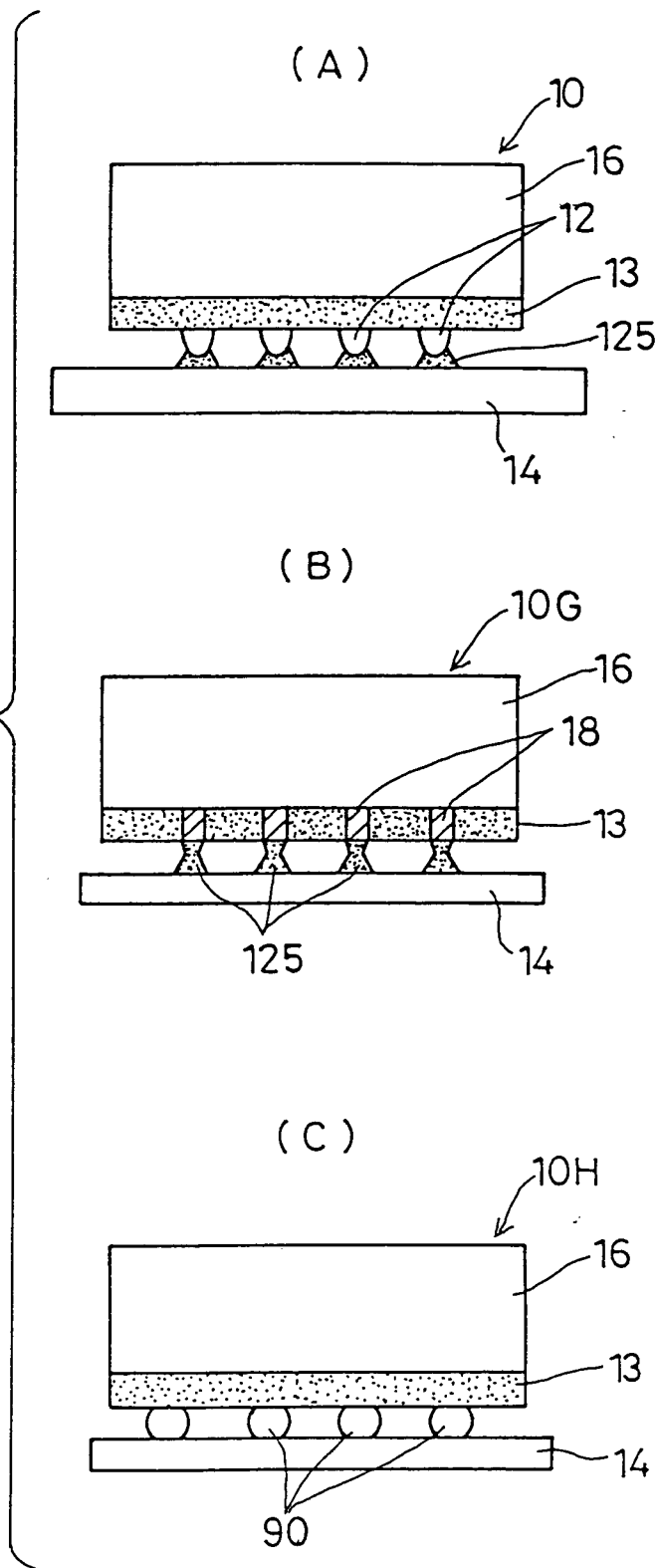


FIG. 53

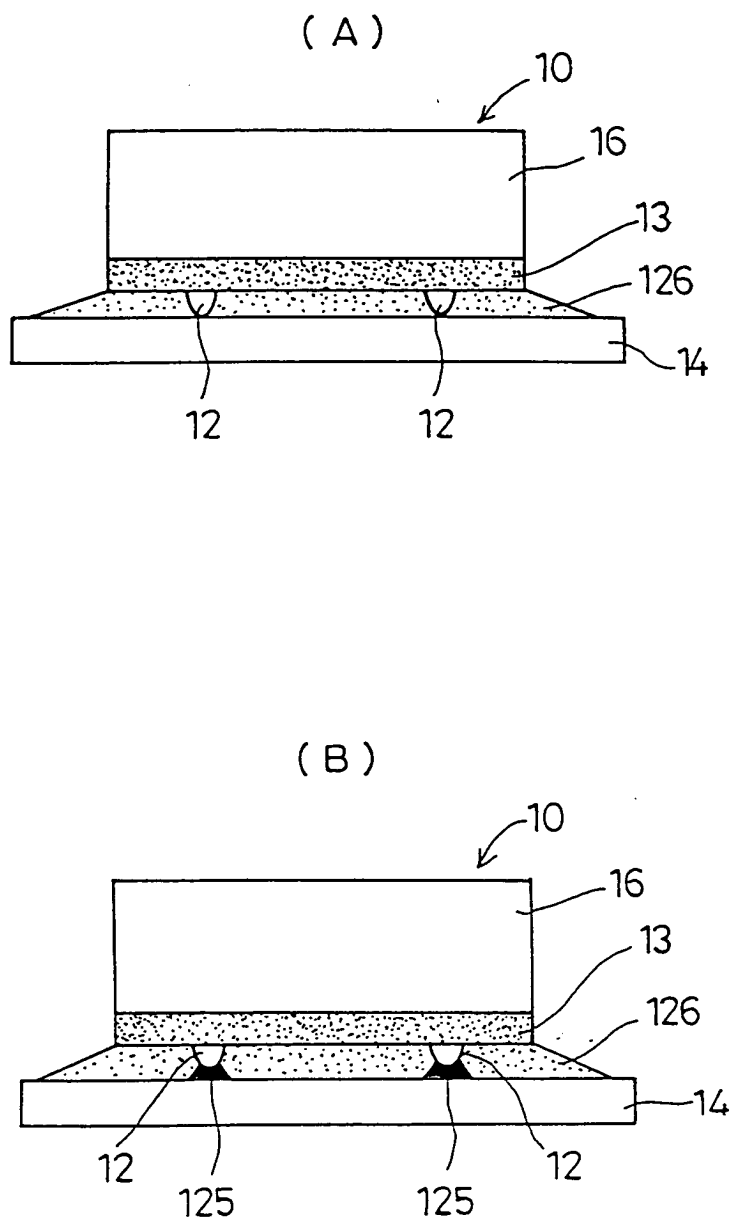


FIG. 54

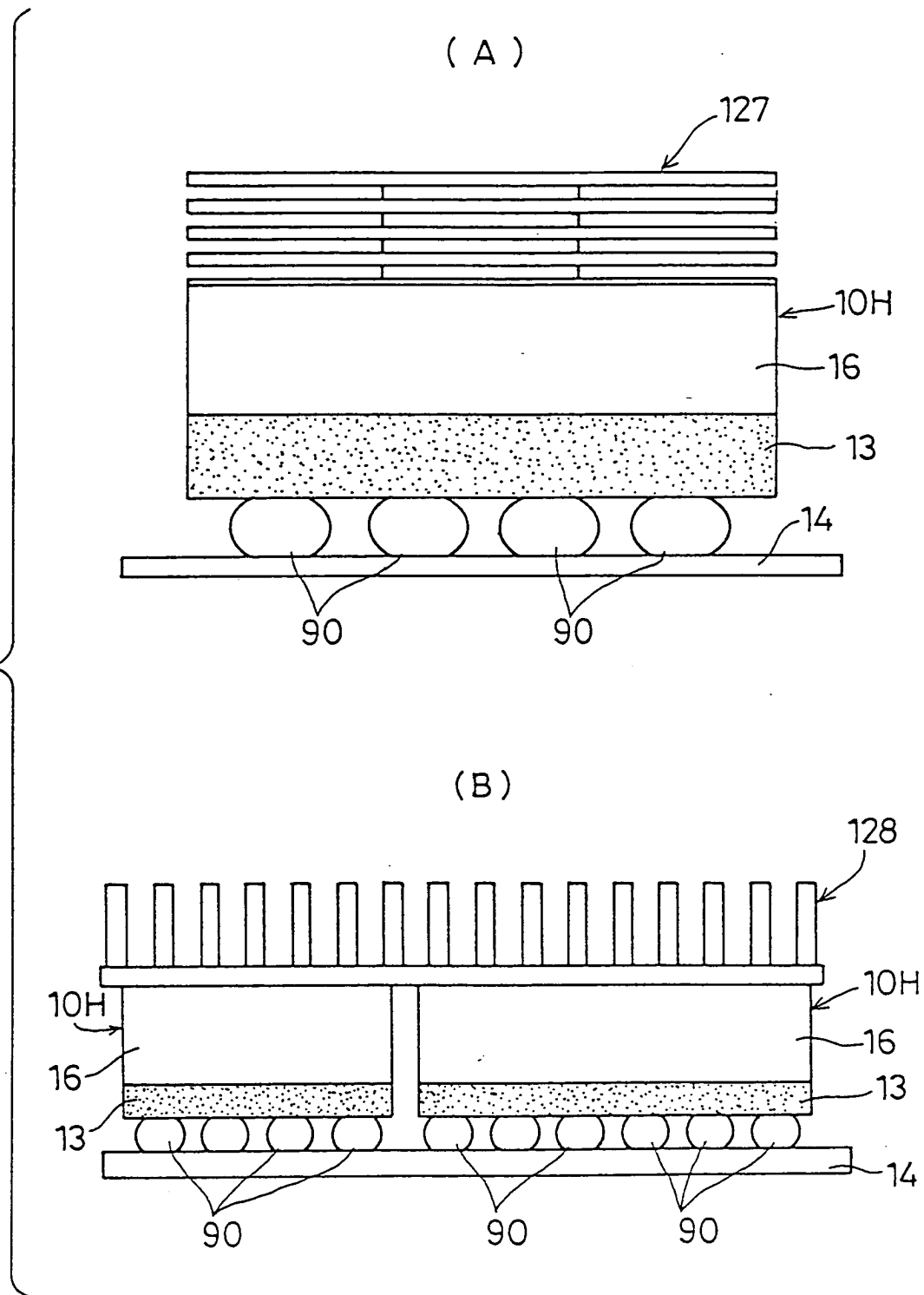




FIG. 55

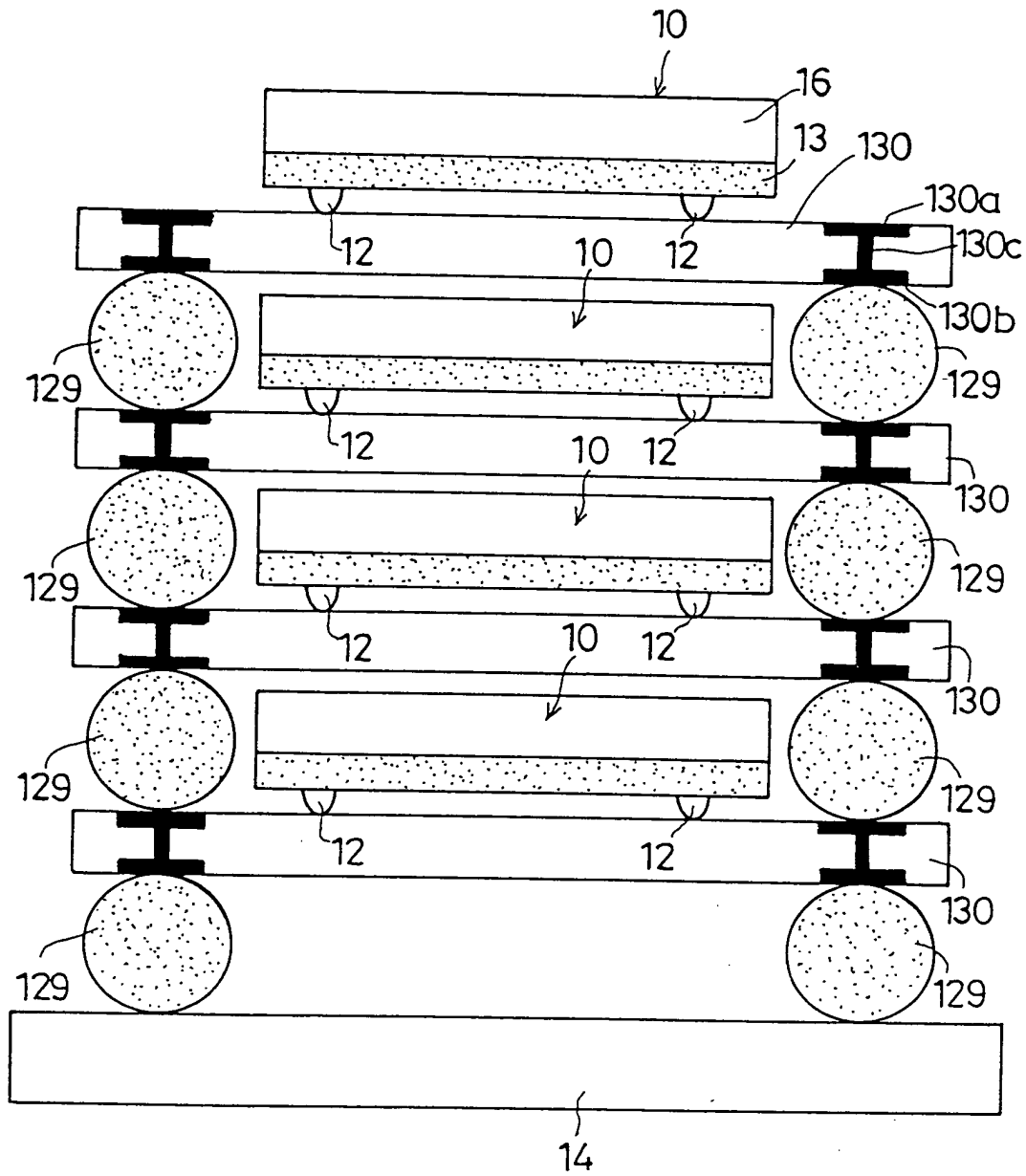


FIG. 56

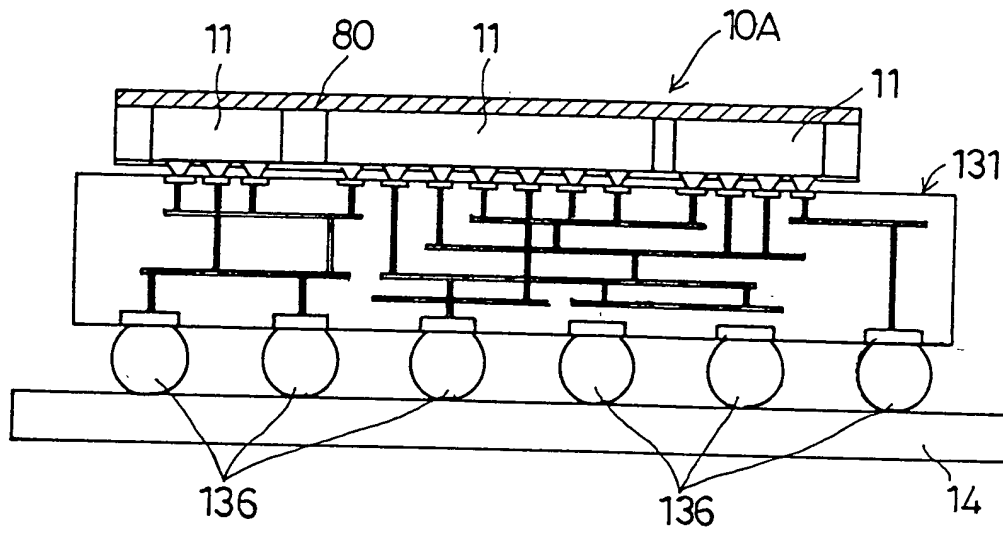


FIG. 57

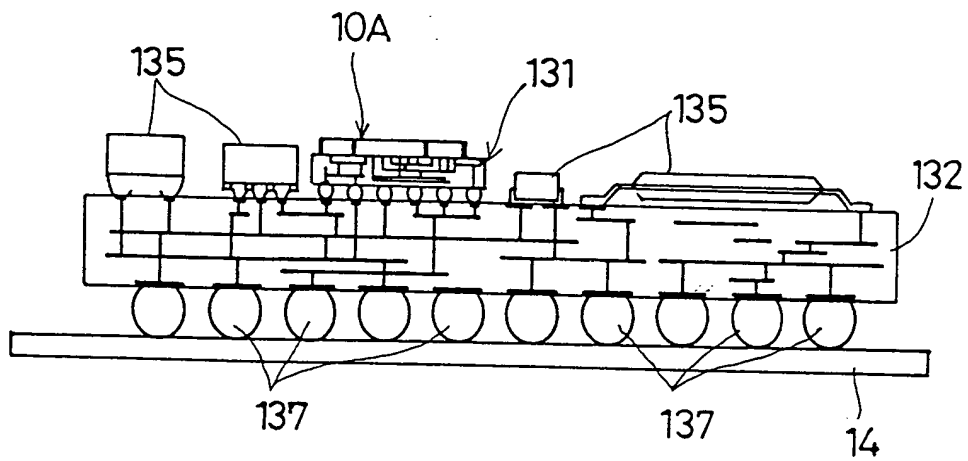


FIG. 58

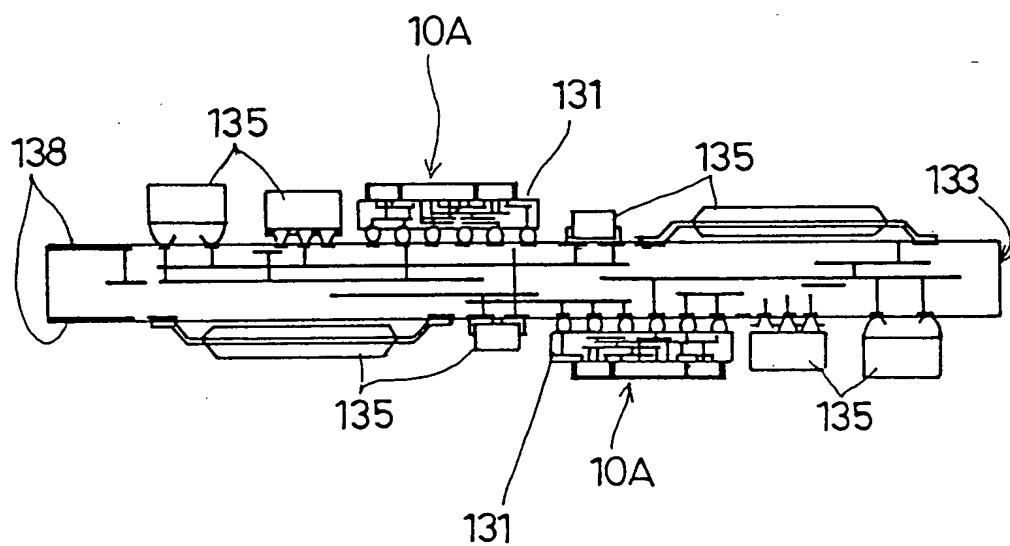


FIG. 59

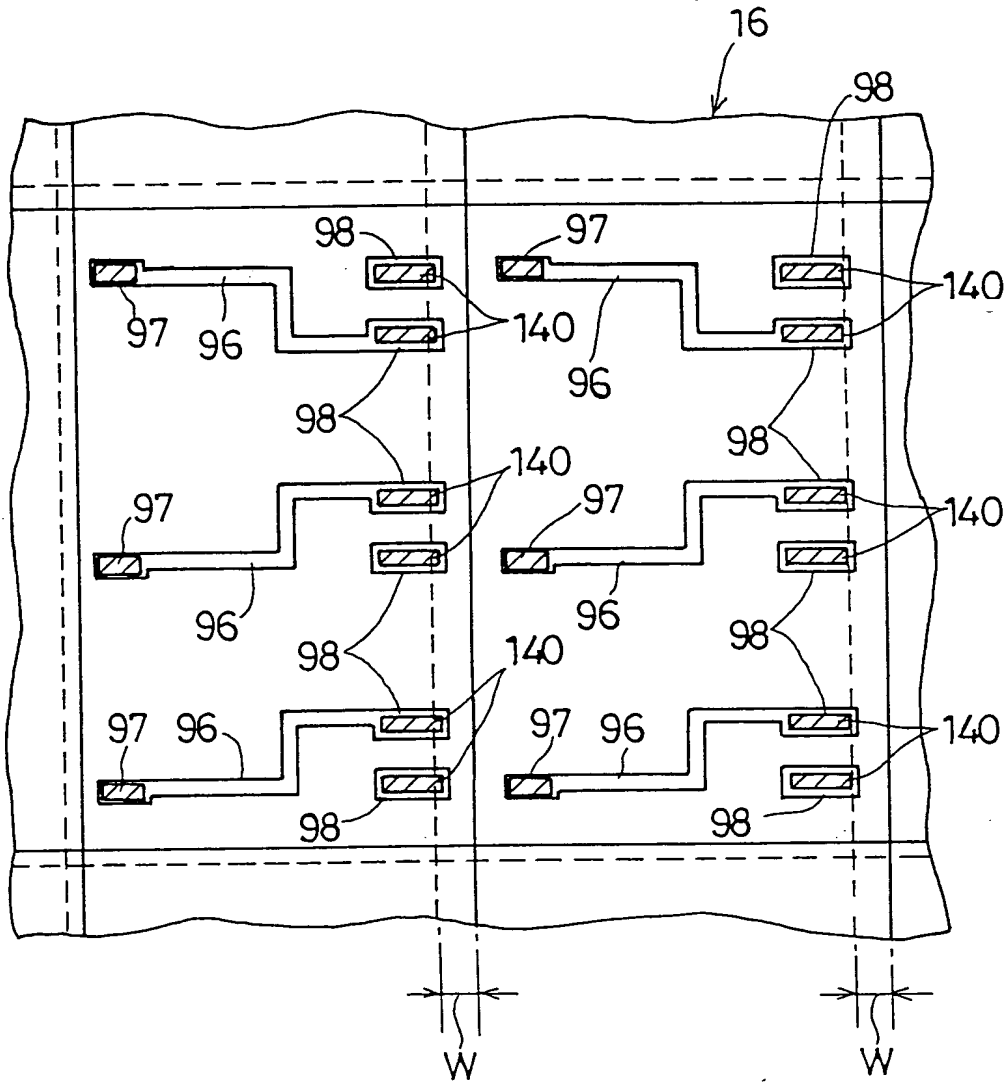




FIG. 61

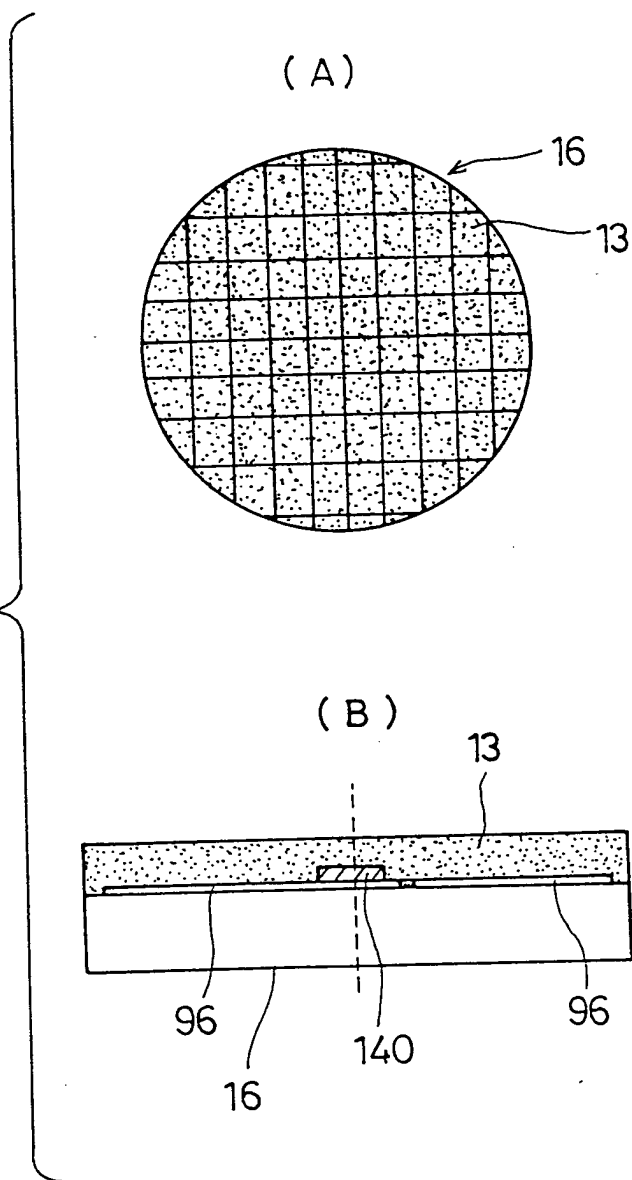


FIG. 62

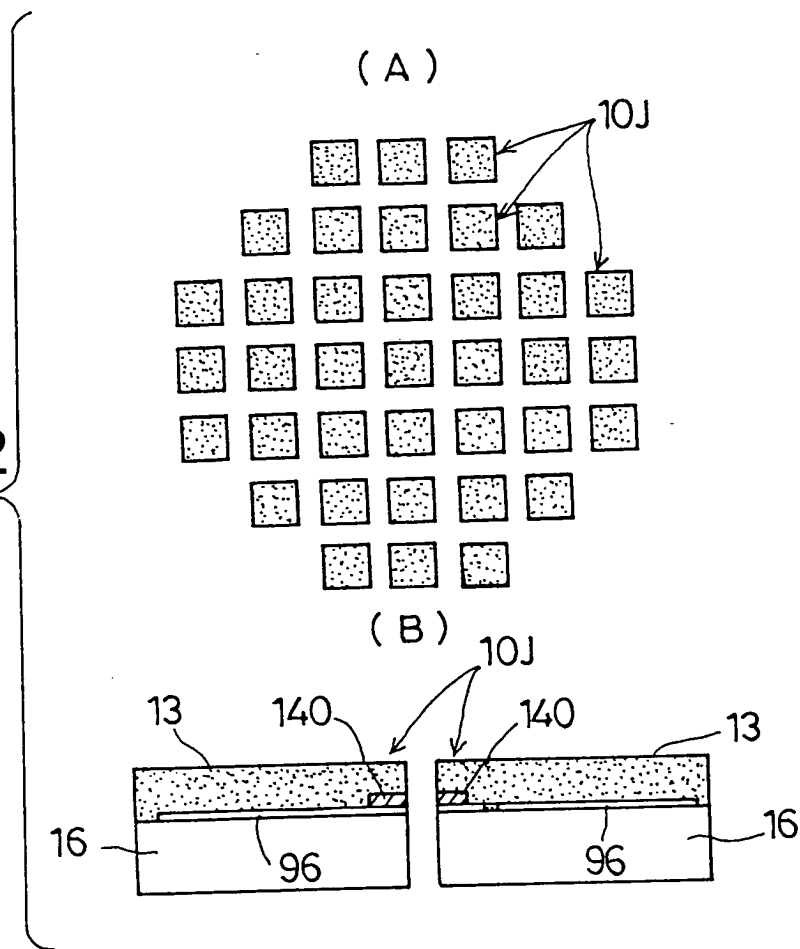


FIG. 63

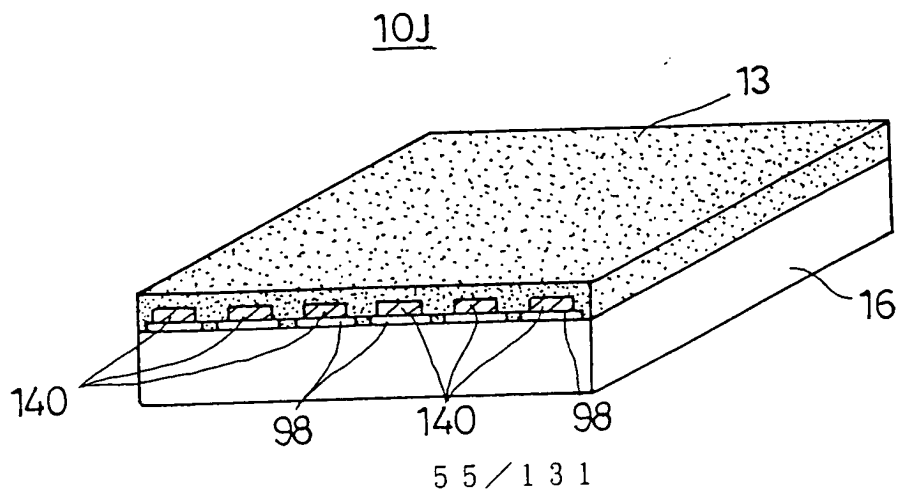


FIG. 64

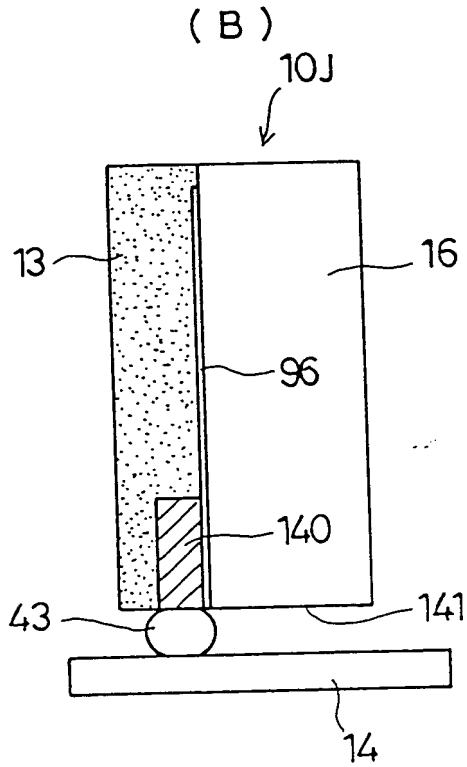
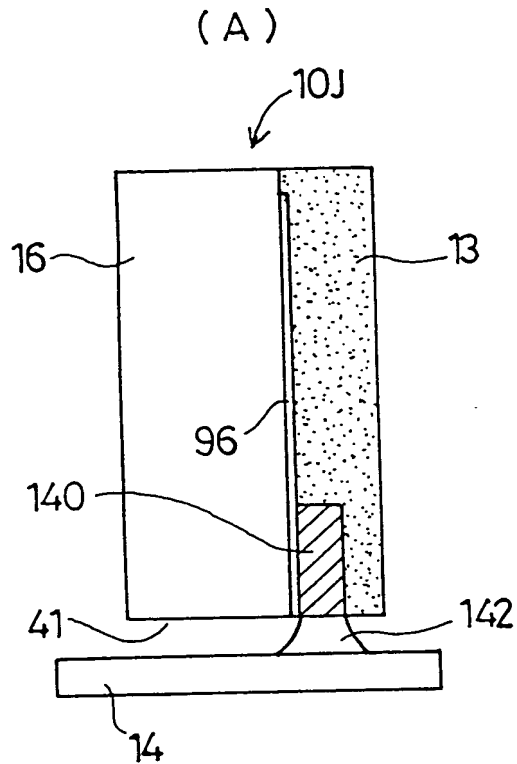




FIG. 65

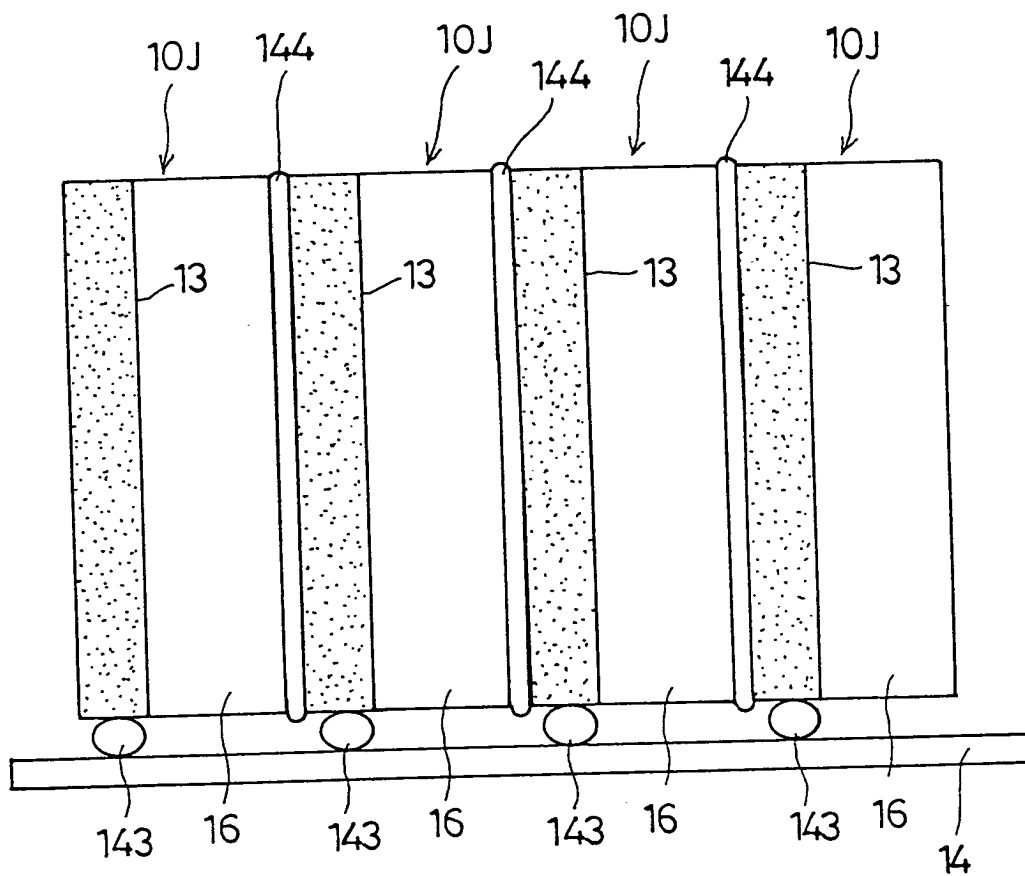


FIG. 66

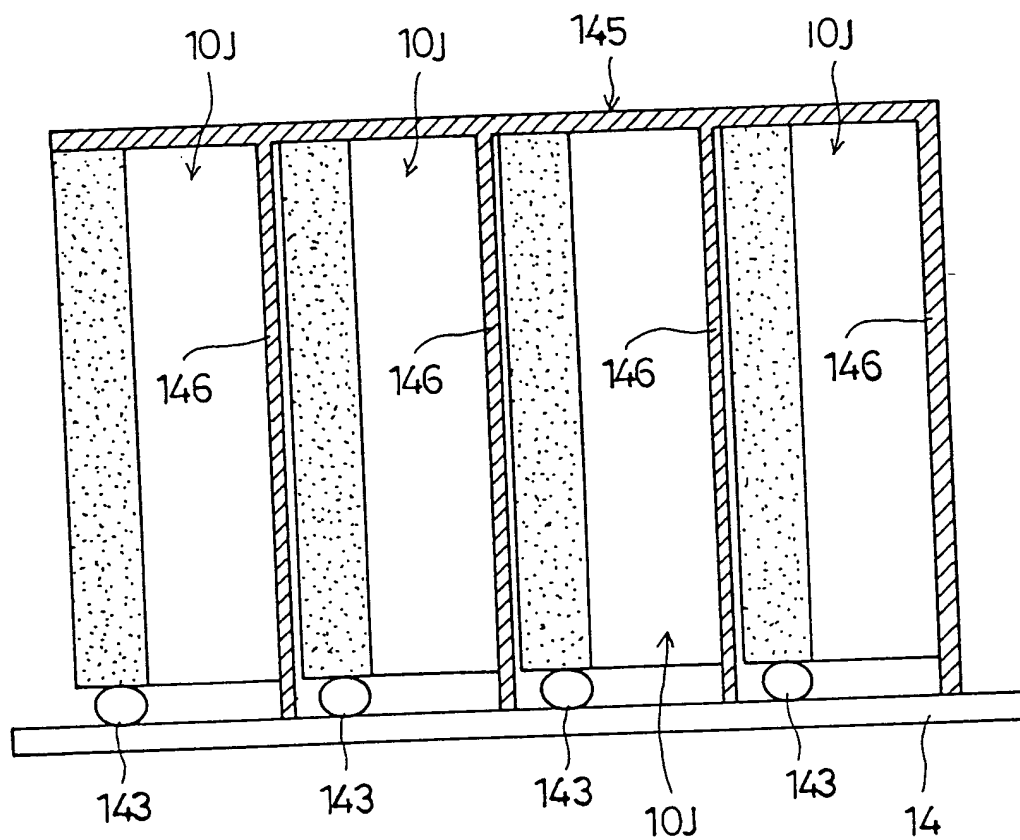


FIG. 67

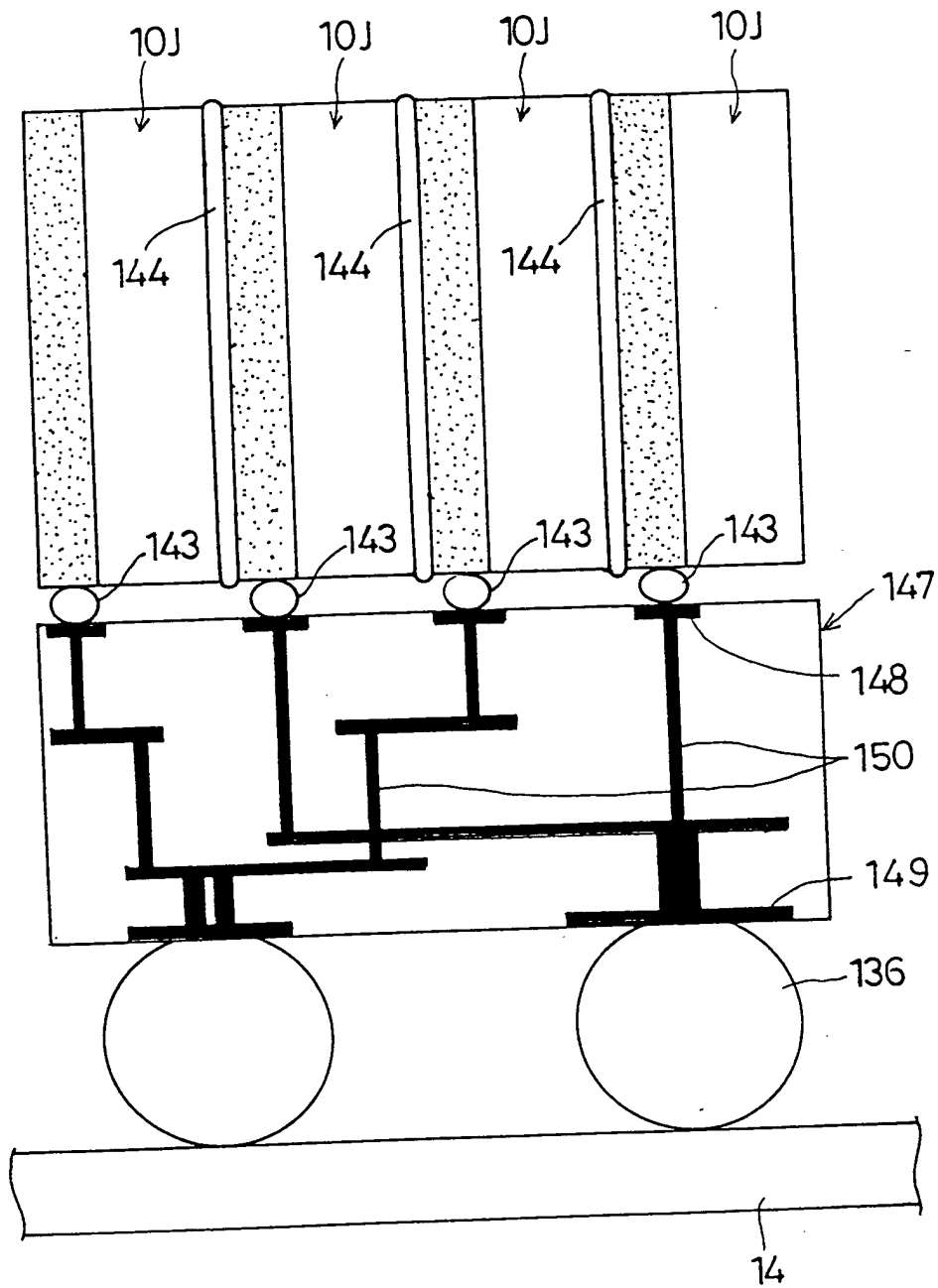


FIG. 68

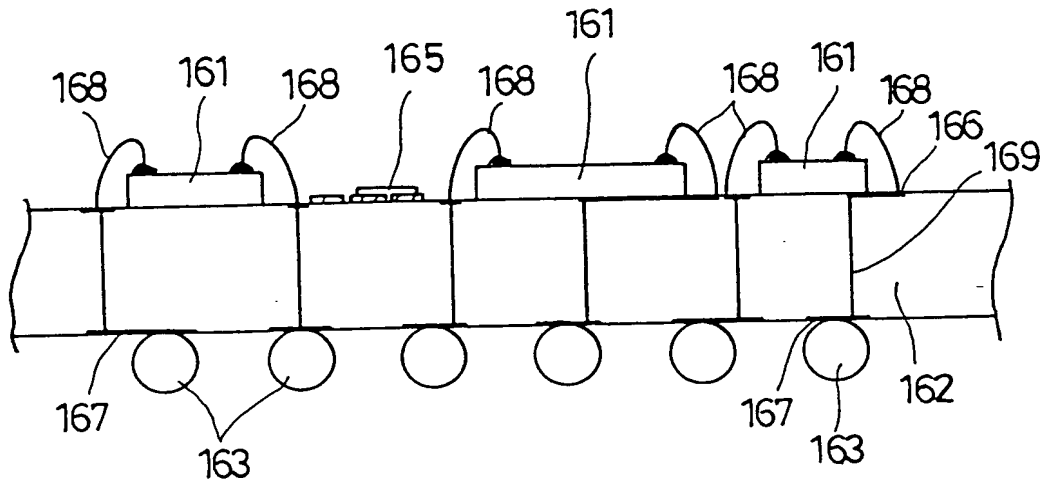


FIG. 69

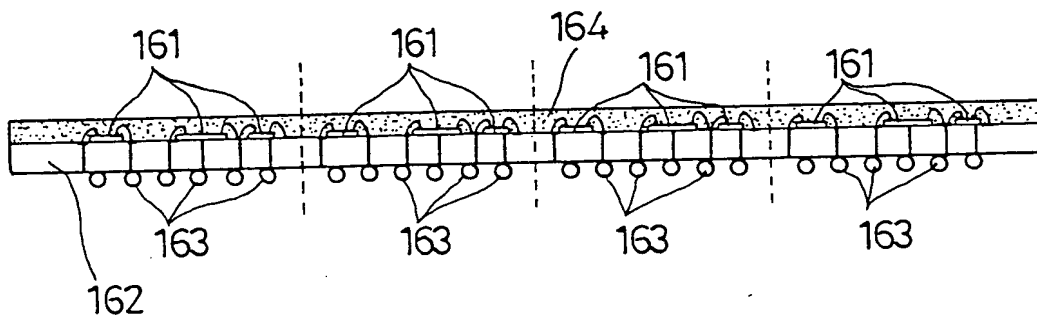


FIG. 70

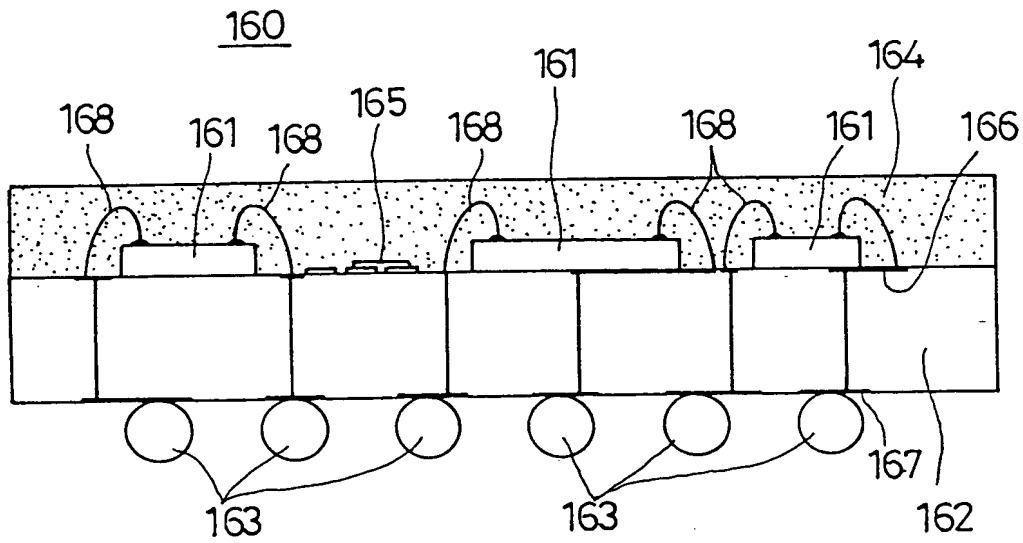


FIG. 71

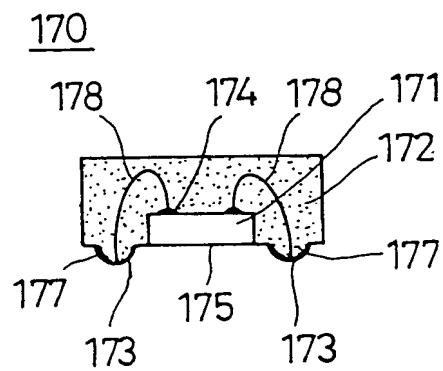


FIG. 72

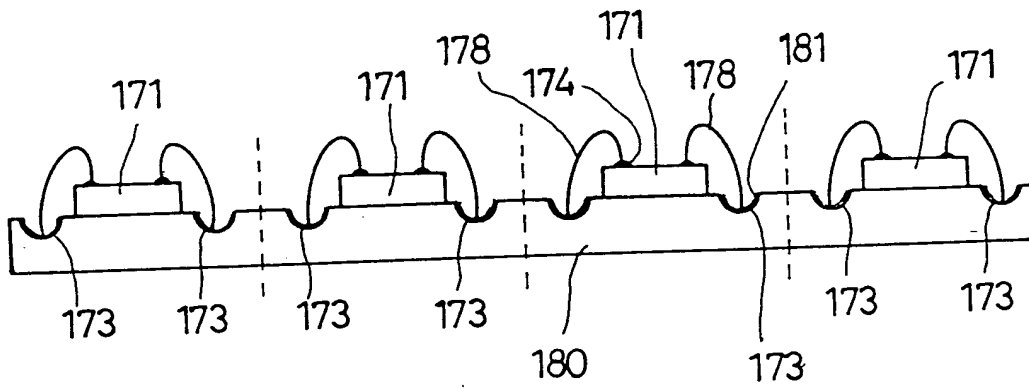


FIG. 73

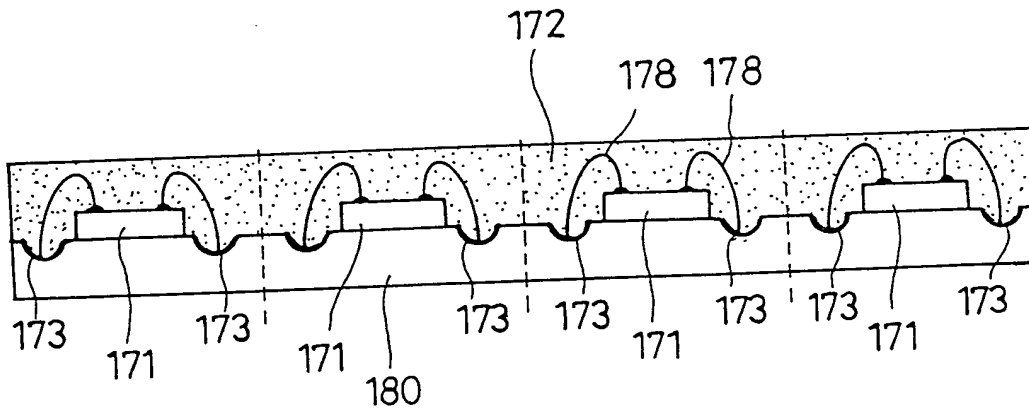


FIG. 74

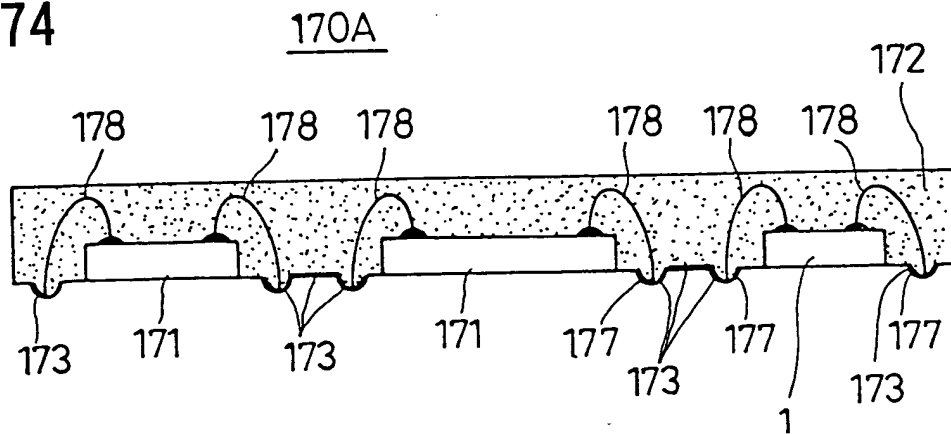


FIG. 75

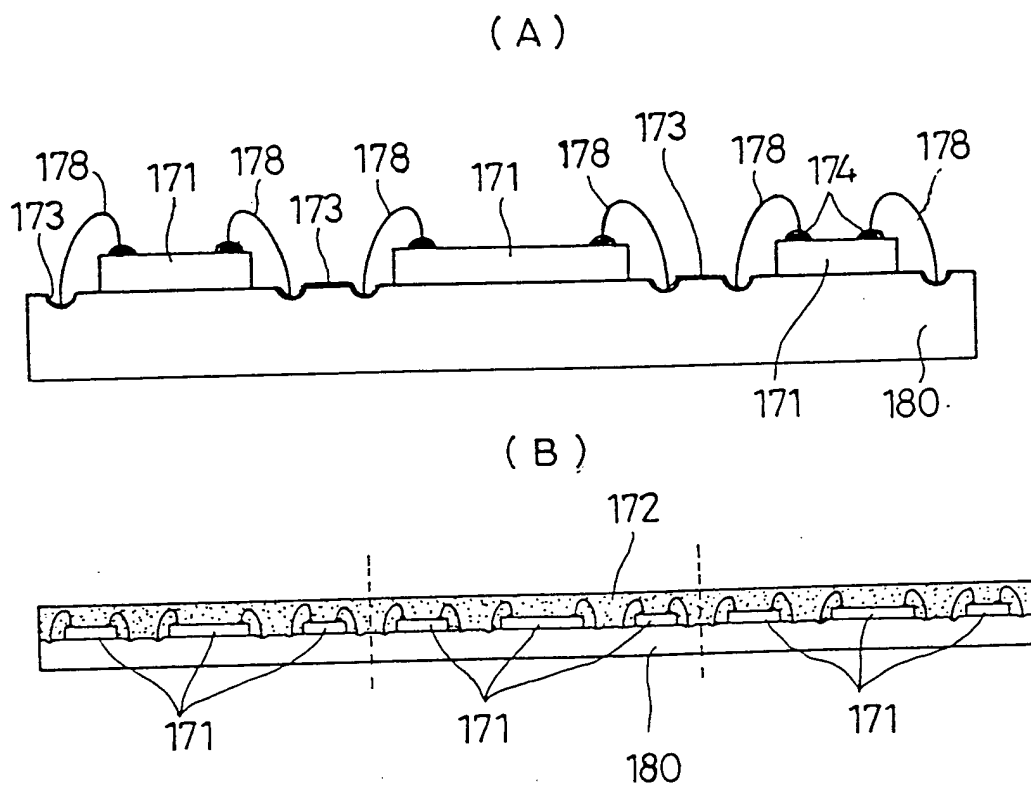


FIG. 76

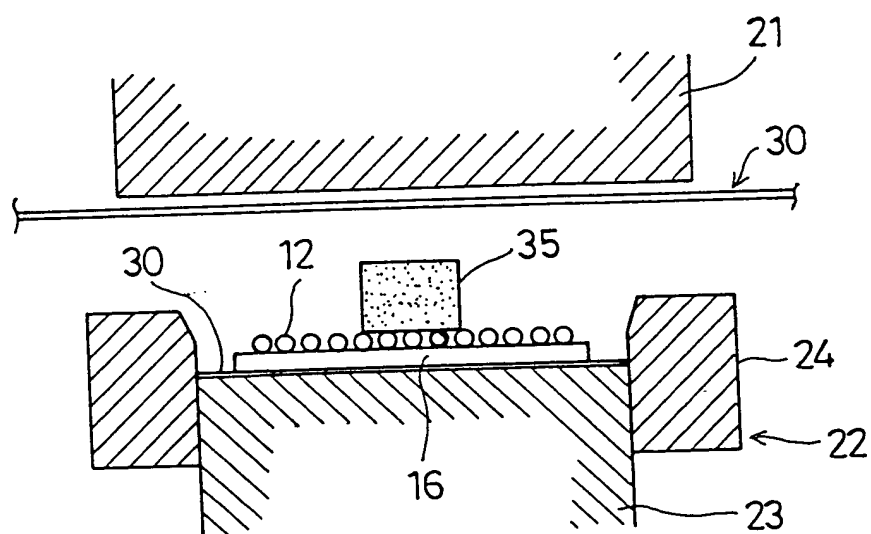


FIG. 77

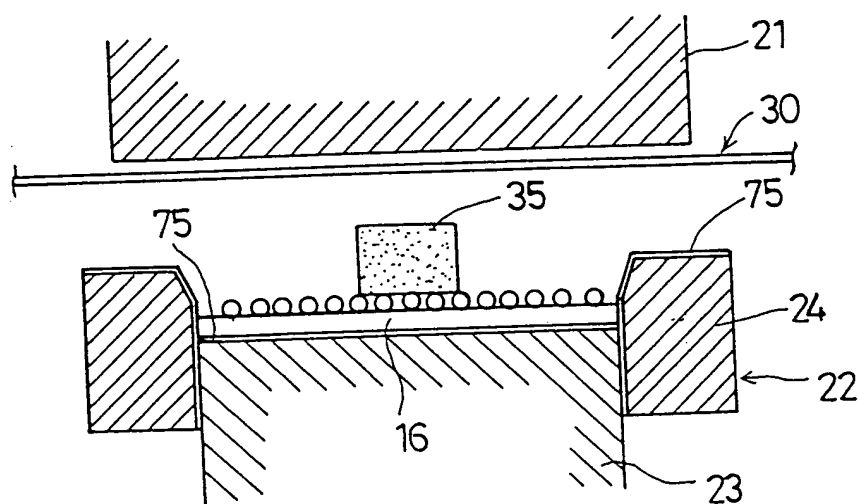
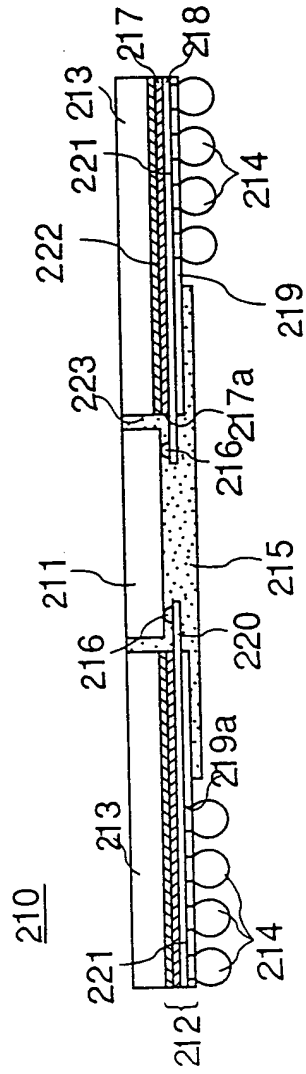
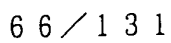




FIG. 78



224





A cross-sectional view of a semiconductor device 210A. The device features a substrate 211 with a central channel region 212. A gate stack 213 is positioned over the channel region. The gate stack includes a gate dielectric layer 219, a gate electrode layer 218, and a gate contact layer 217. The gate contact layer 217 is divided into two regions: 217a and 217b. The gate contact layer 217a is connected to the gate electrode layer 218, and the gate contact layer 217b is connected to the gate electrode layer 218. The gate contact layer 217a is also connected to the gate electrode layer 218. The gate contact layer 217b is connected to the gate electrode layer 218. The gate contact layer 217a is connected to the gate electrode layer 218. The gate contact layer 217b is connected to the gate electrode layer 218.

6 9 / 1 3 1

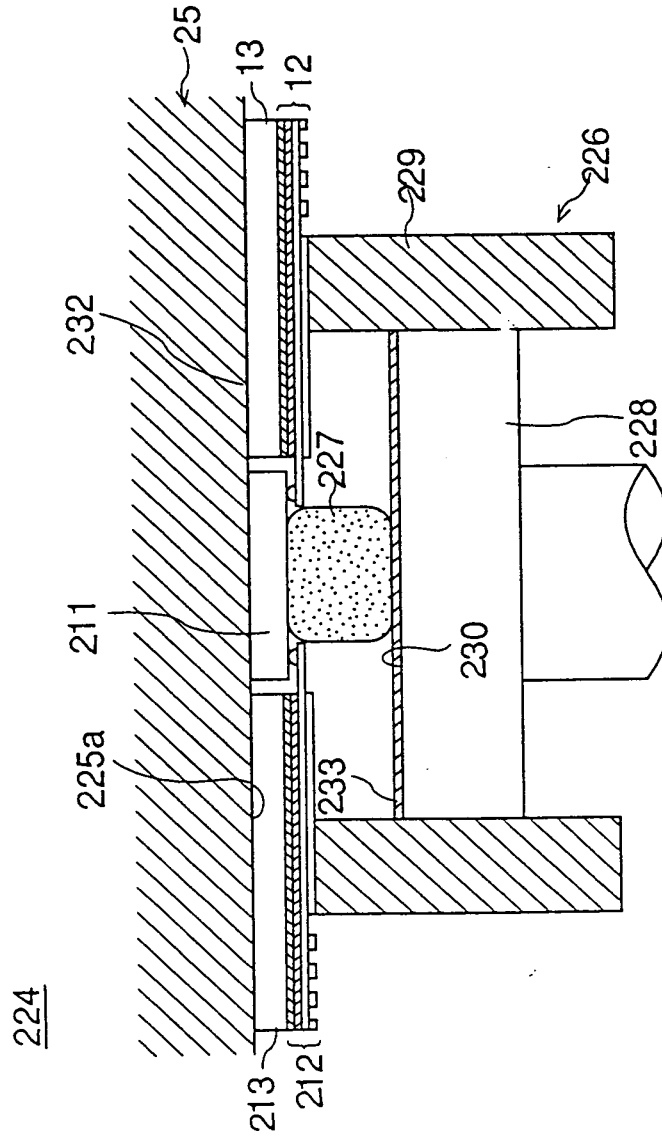


FIG. 83

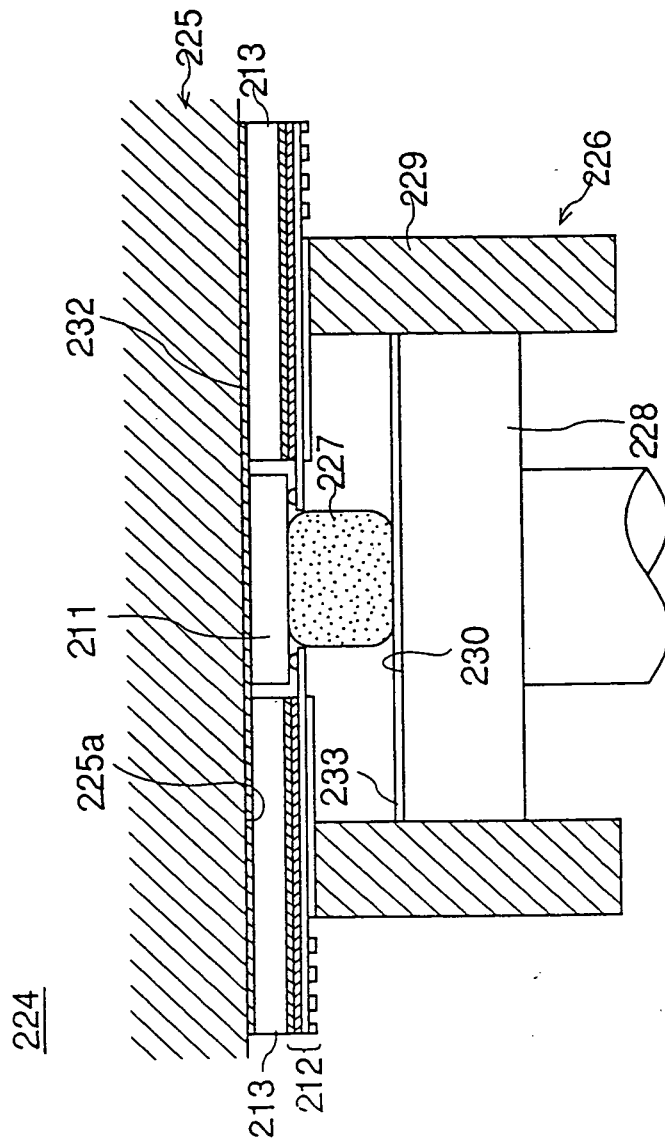


FIG. 84

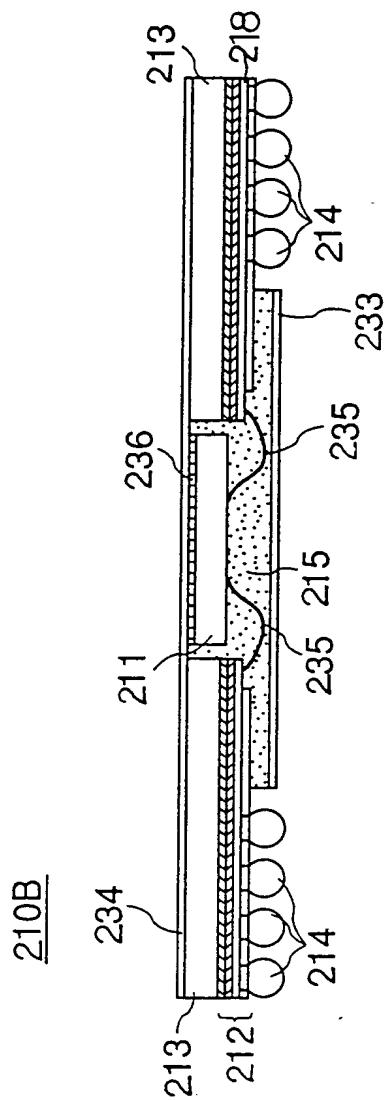


FIG. 85

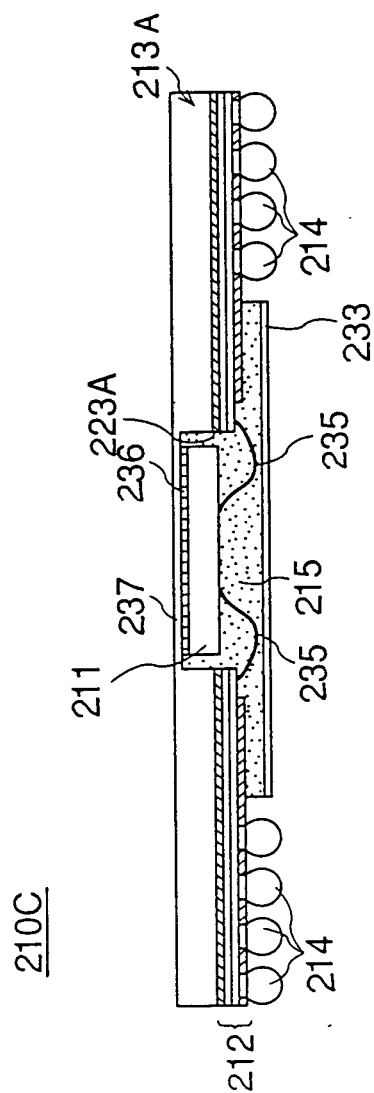
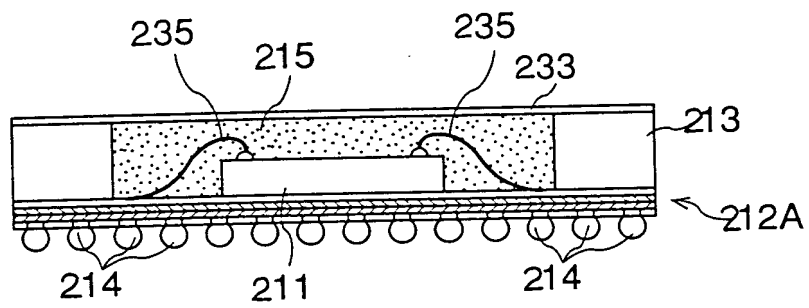




FIG. 86

210D

7 4 / 1 3 1

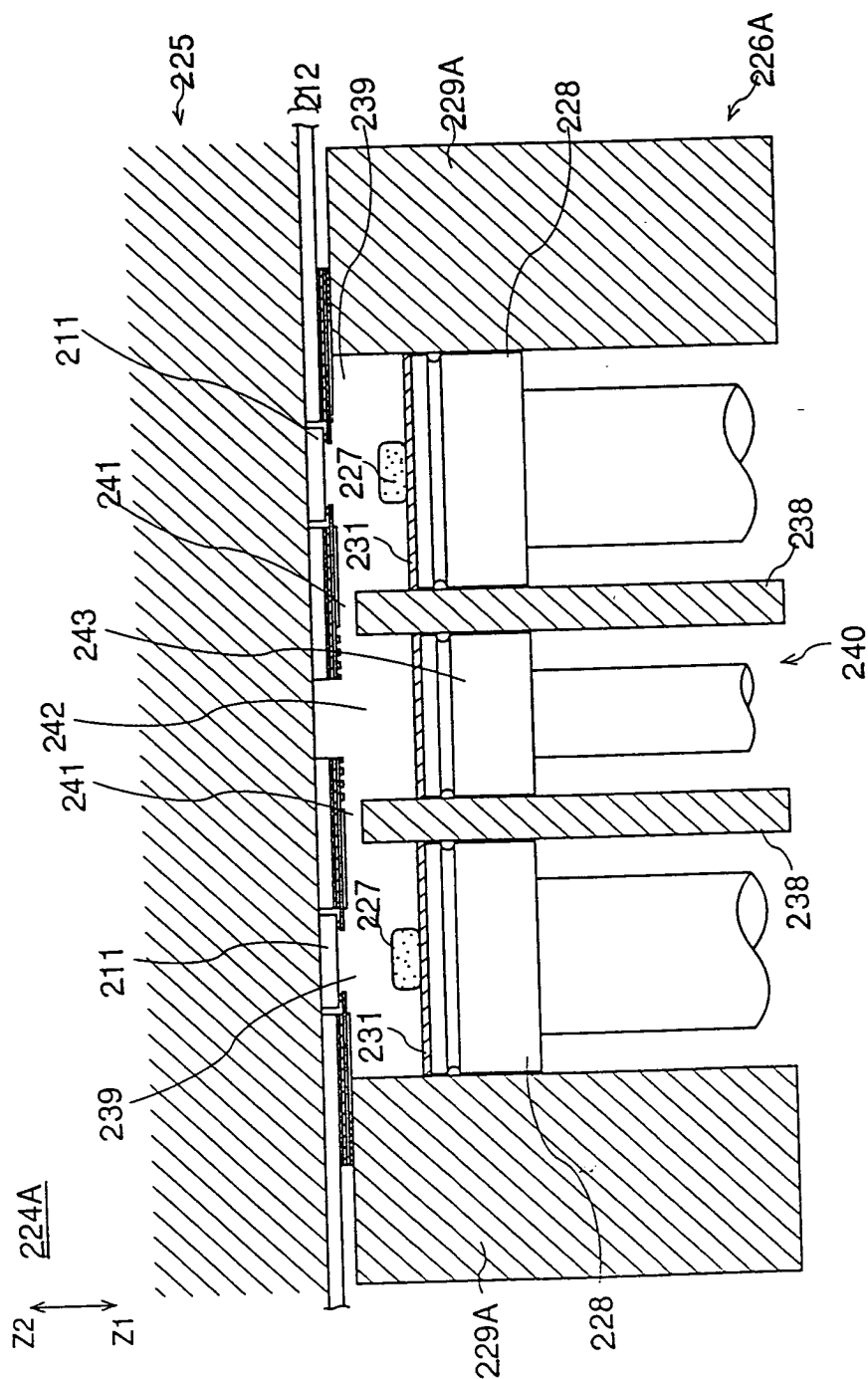


FIG. 88

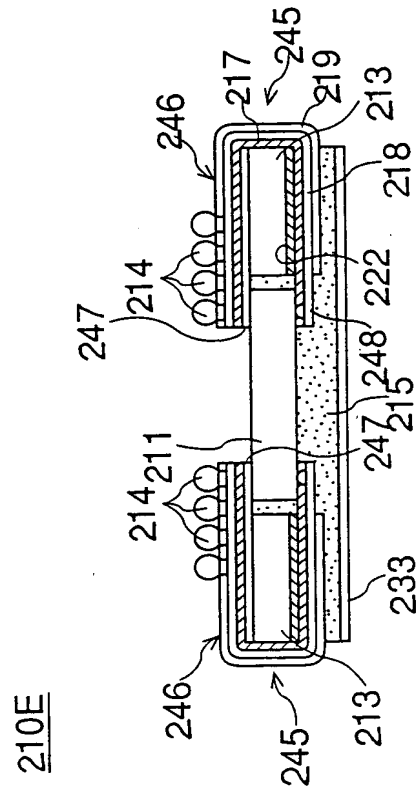


FIG. 89

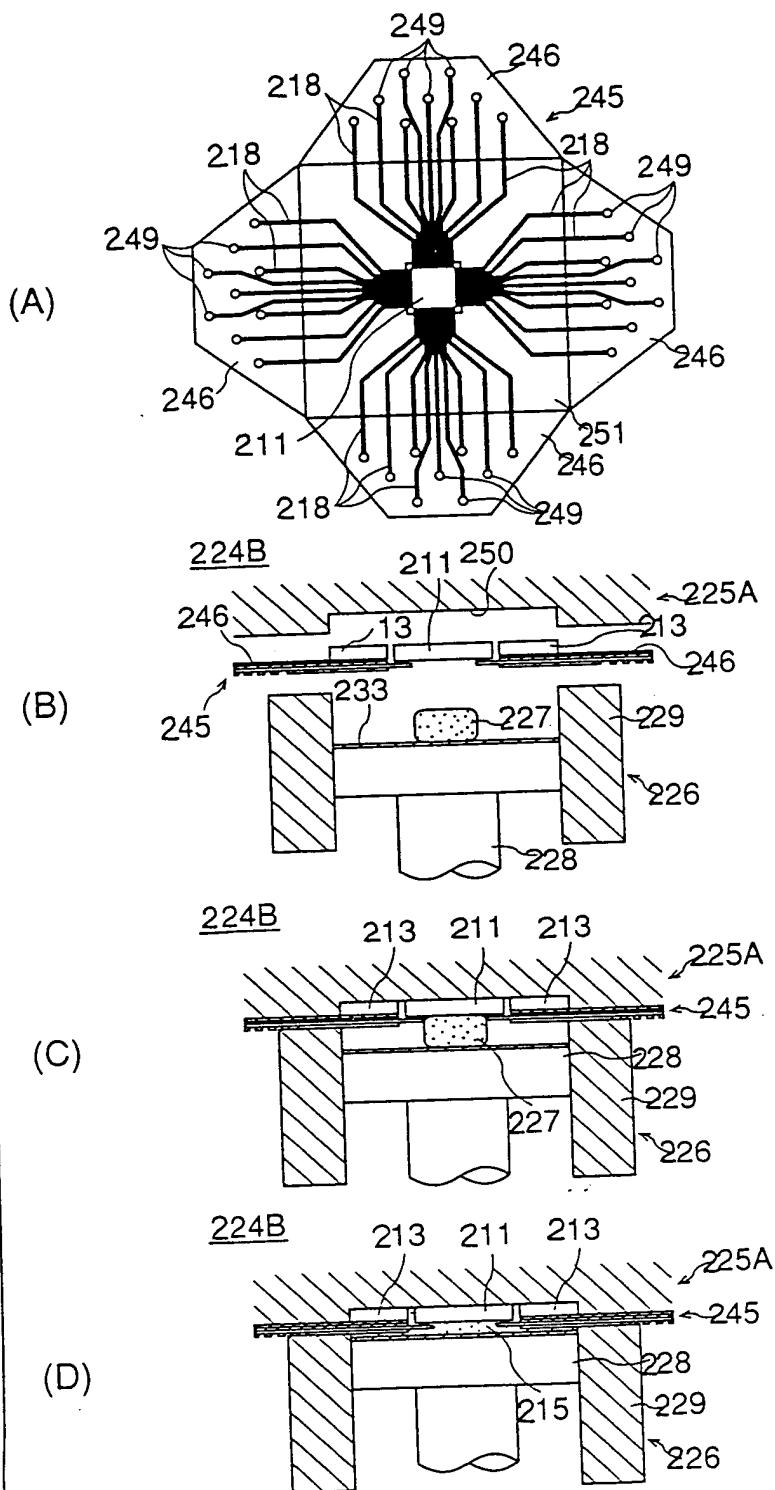


FIG. 90

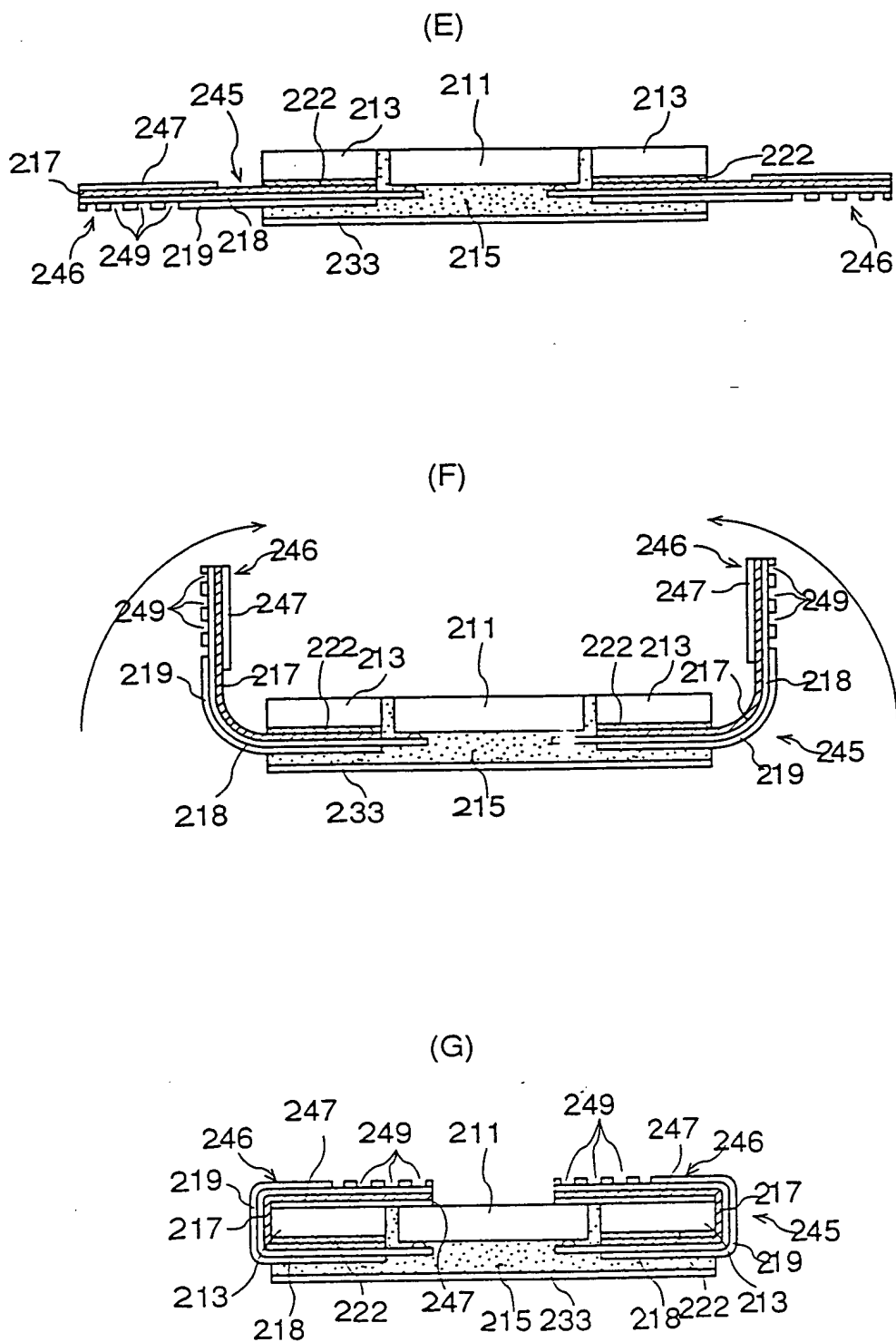
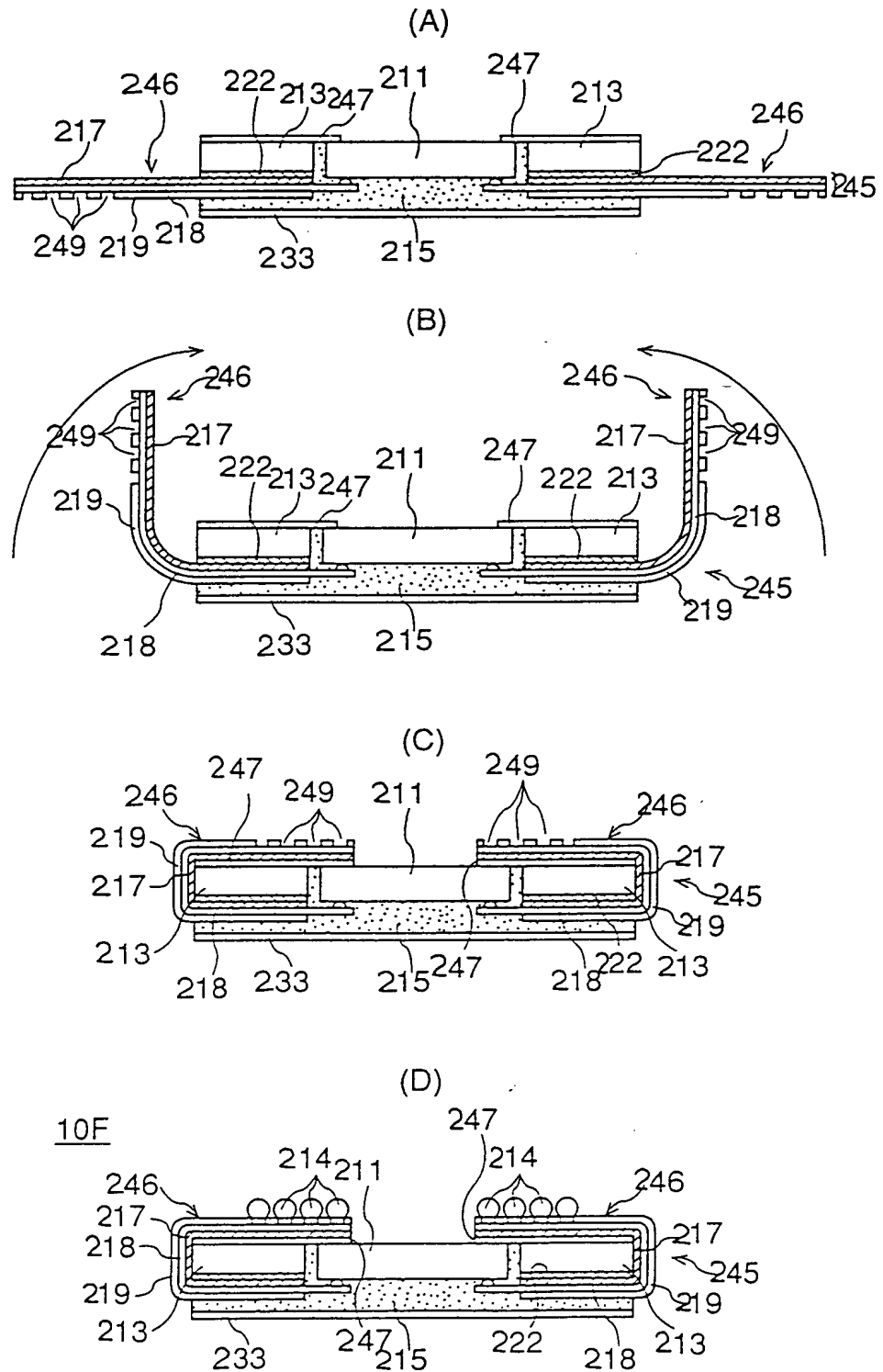


FIG. 91



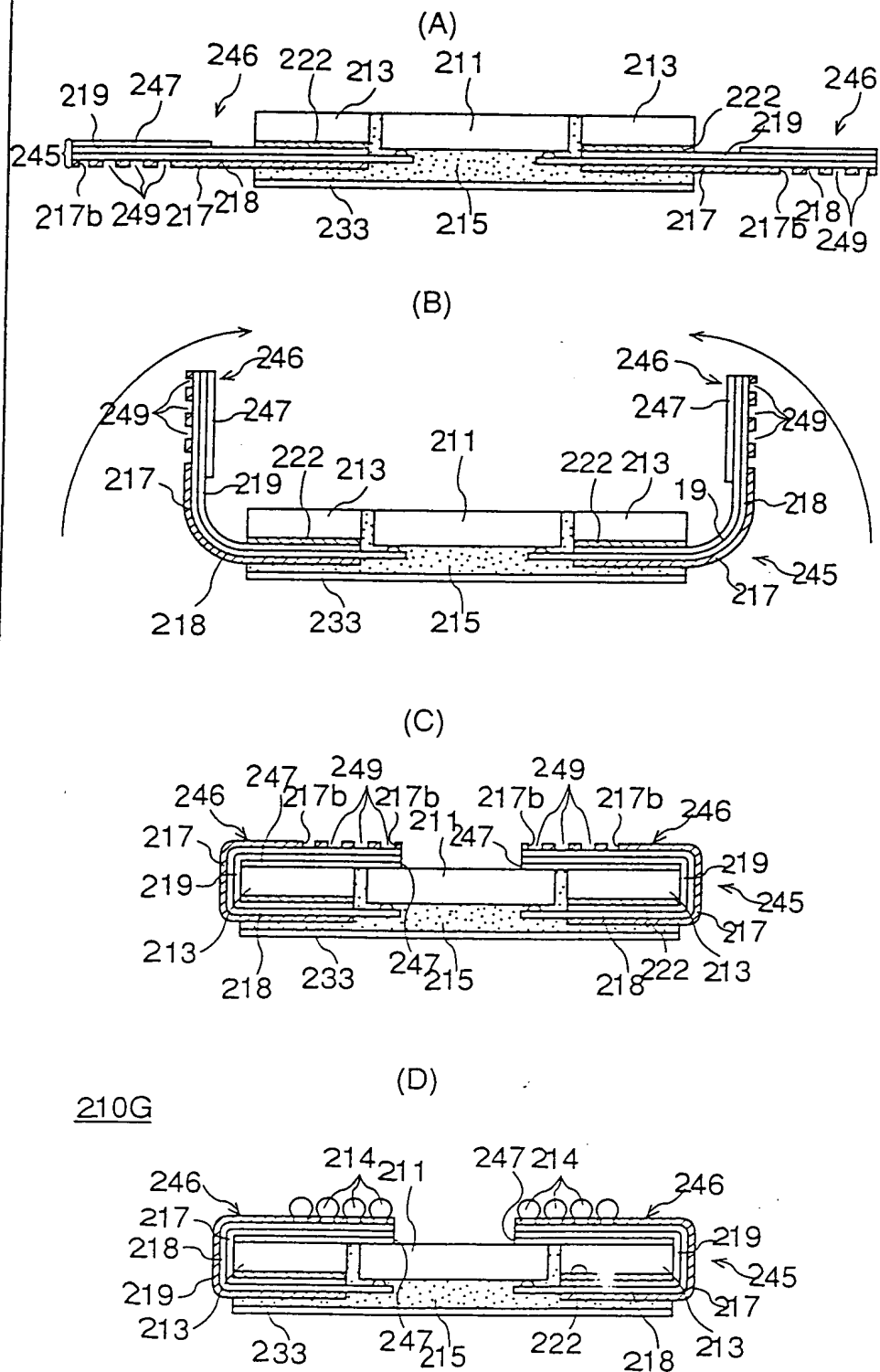


FIG. 93

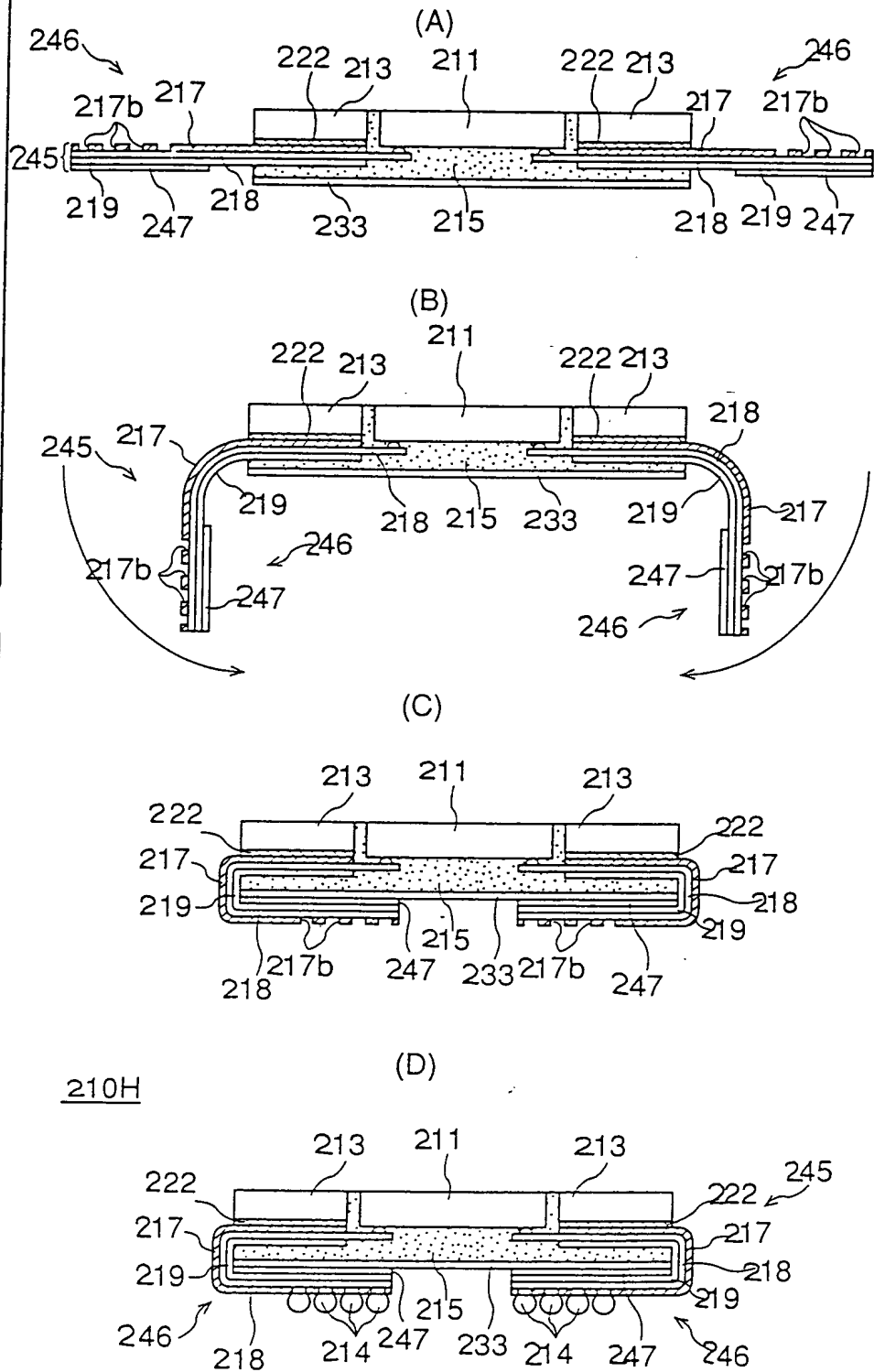
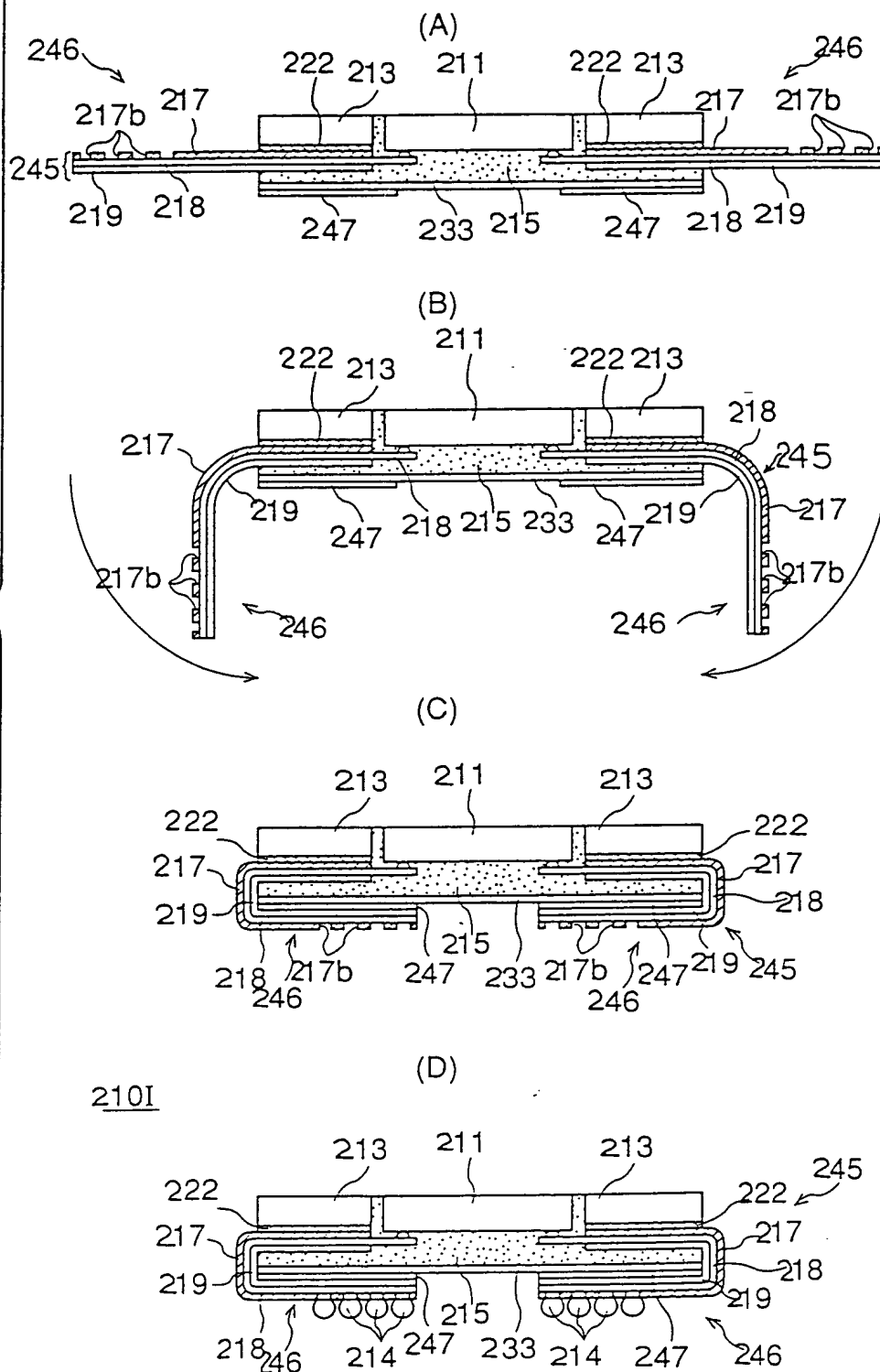




FIG. 94



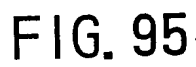


FIG. 96

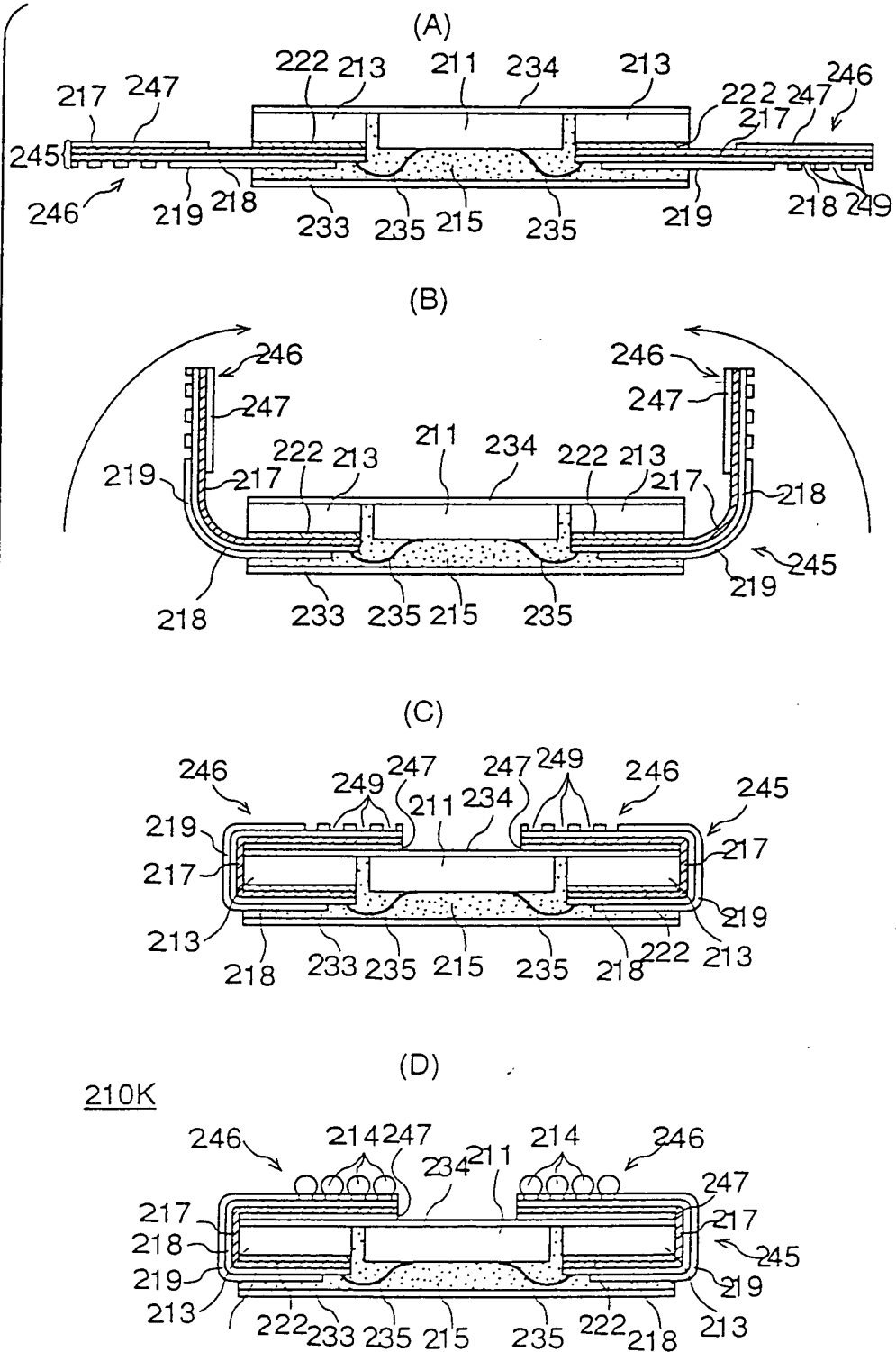




FIG. 98

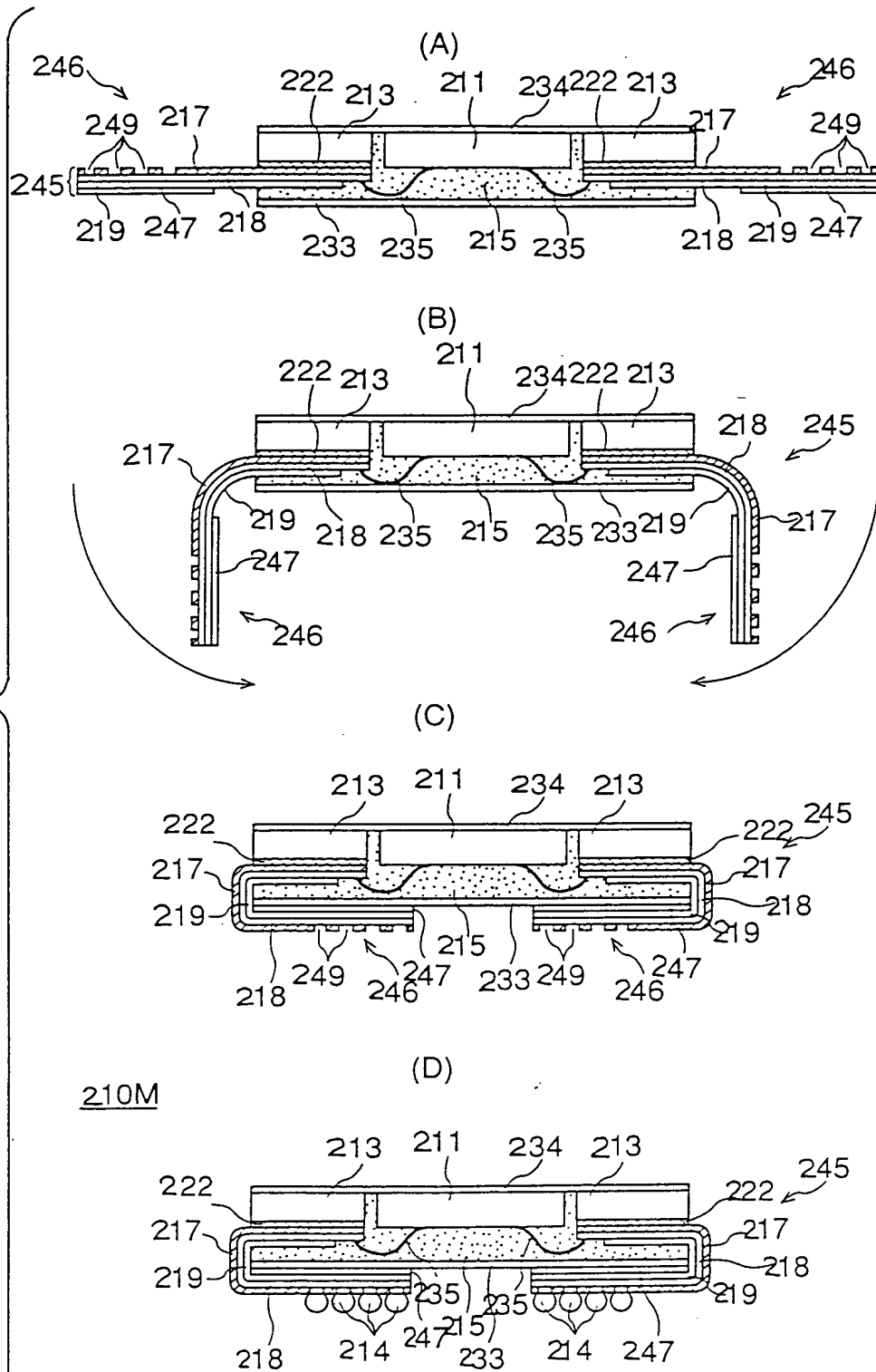


FIG. 99

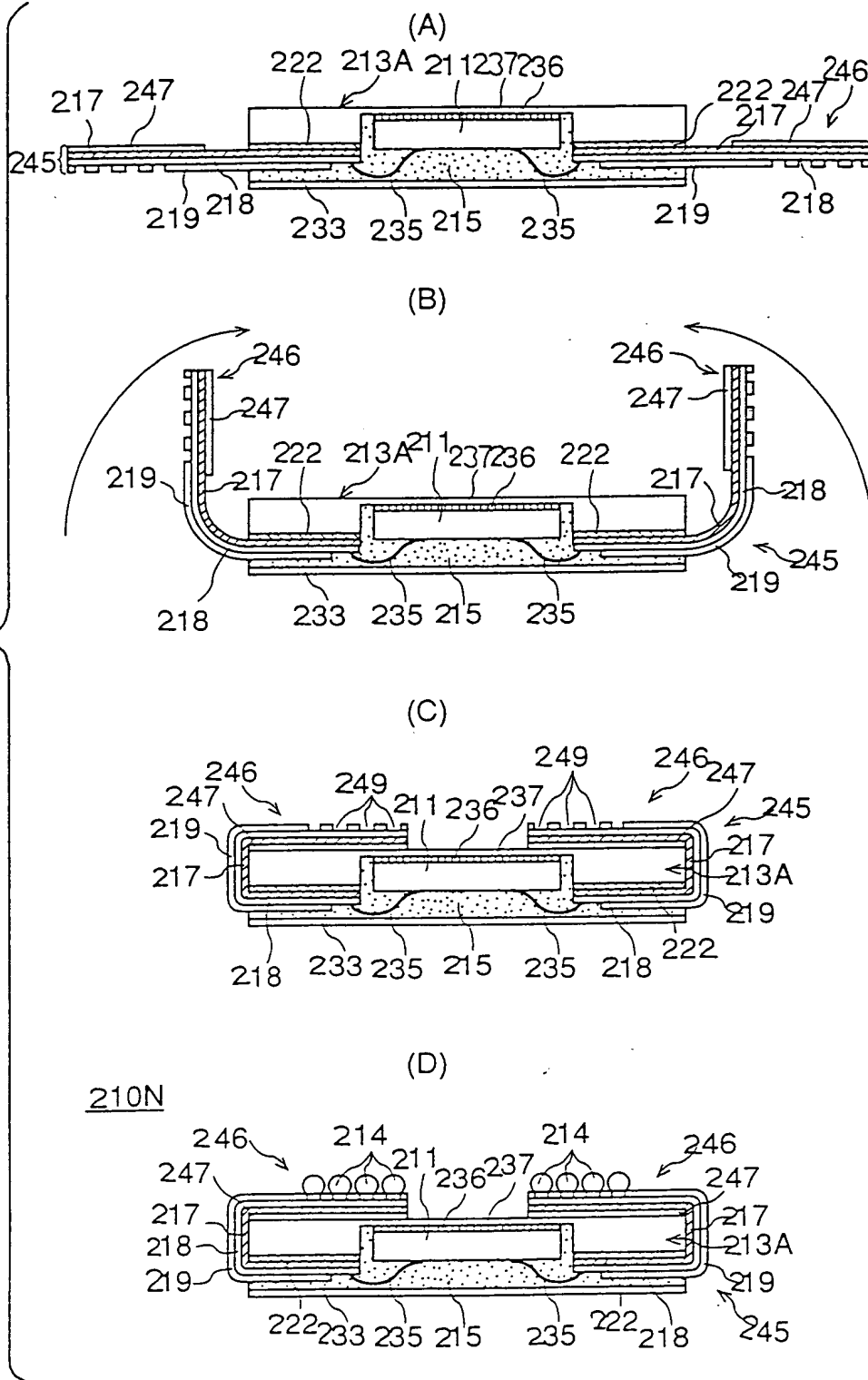
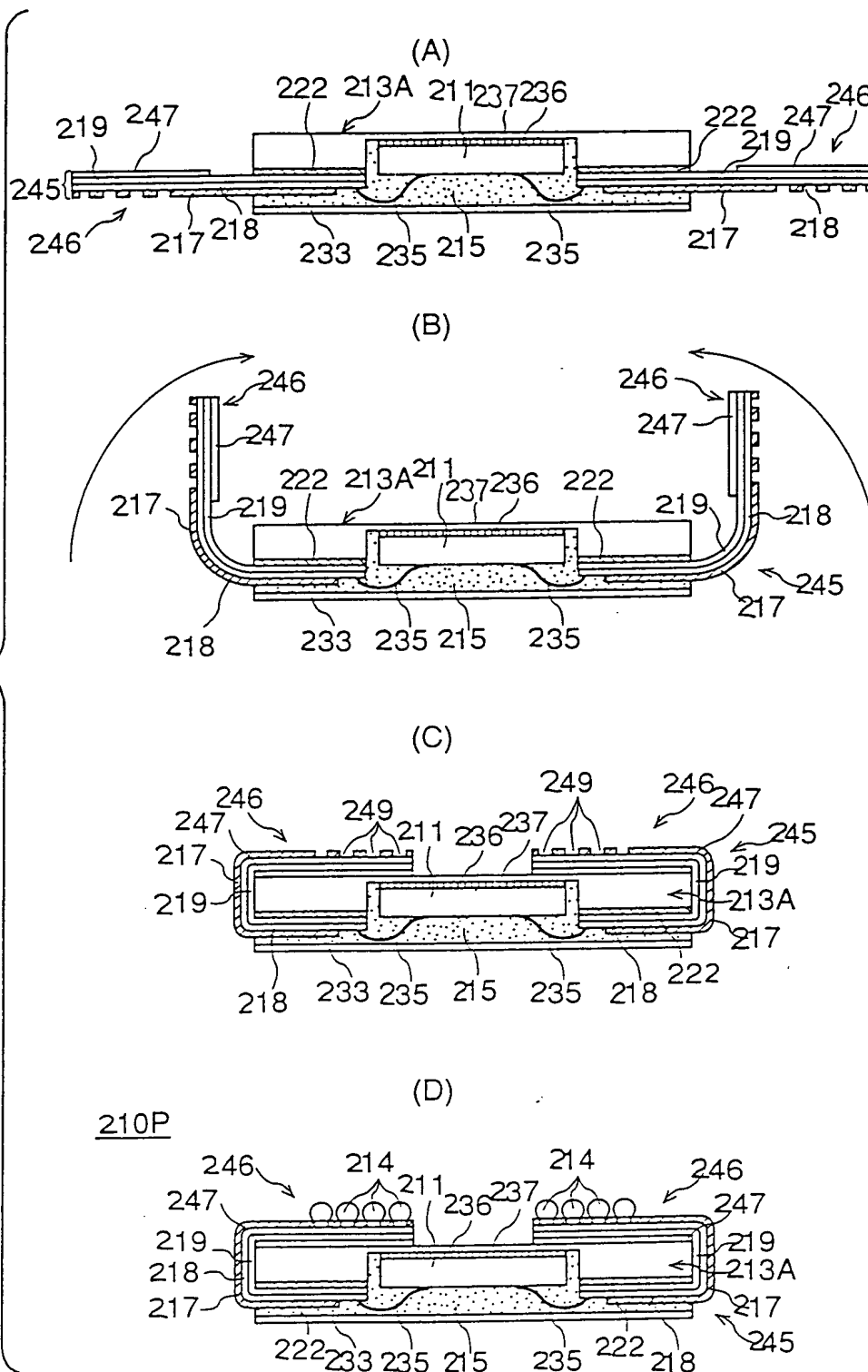
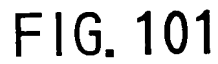


FIG. 100







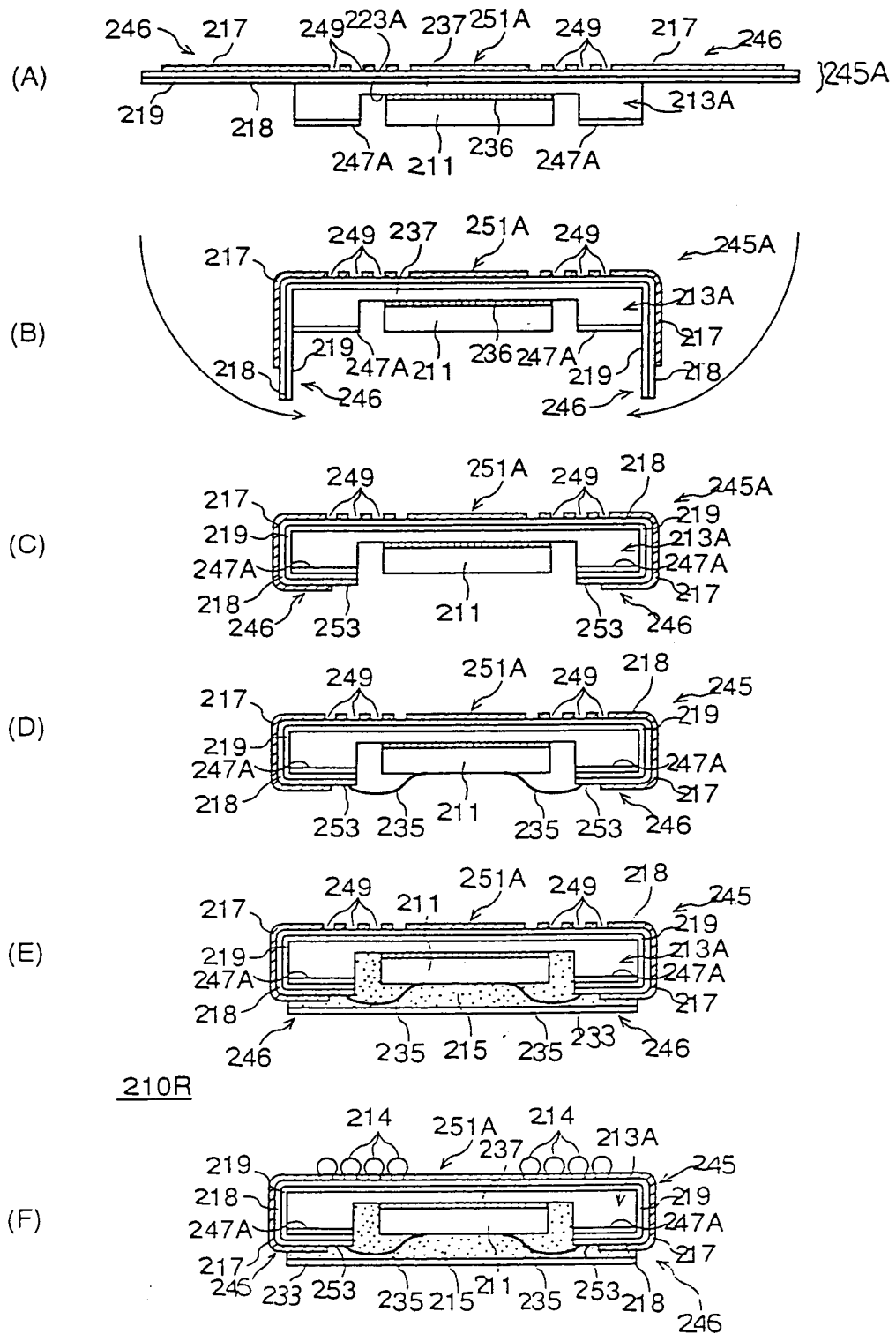


FIG. 103

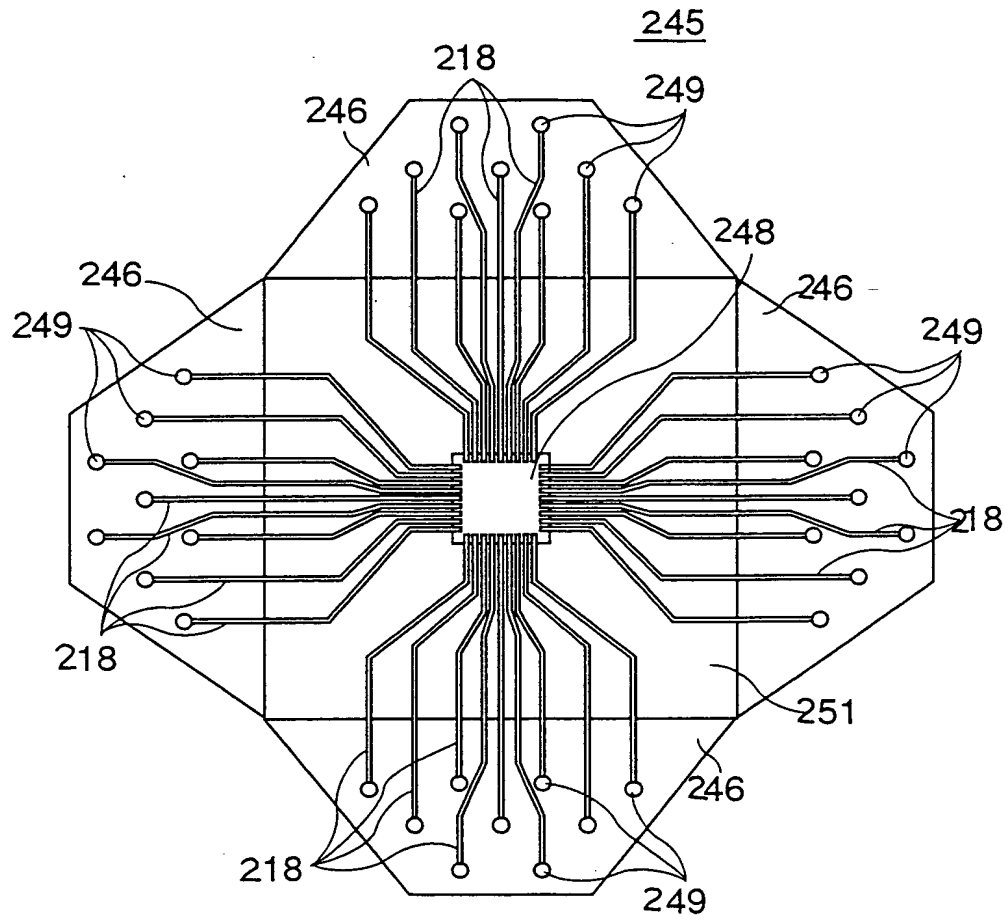


FIG. 104

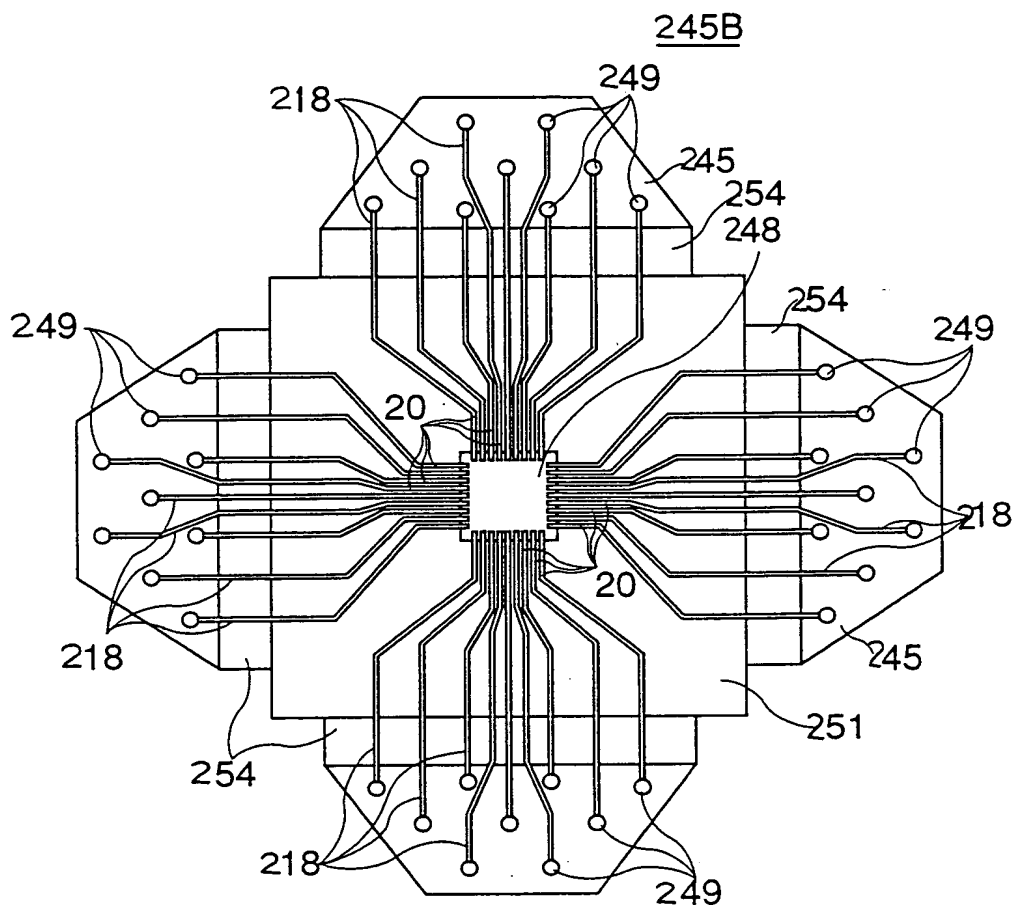


FIG. 105

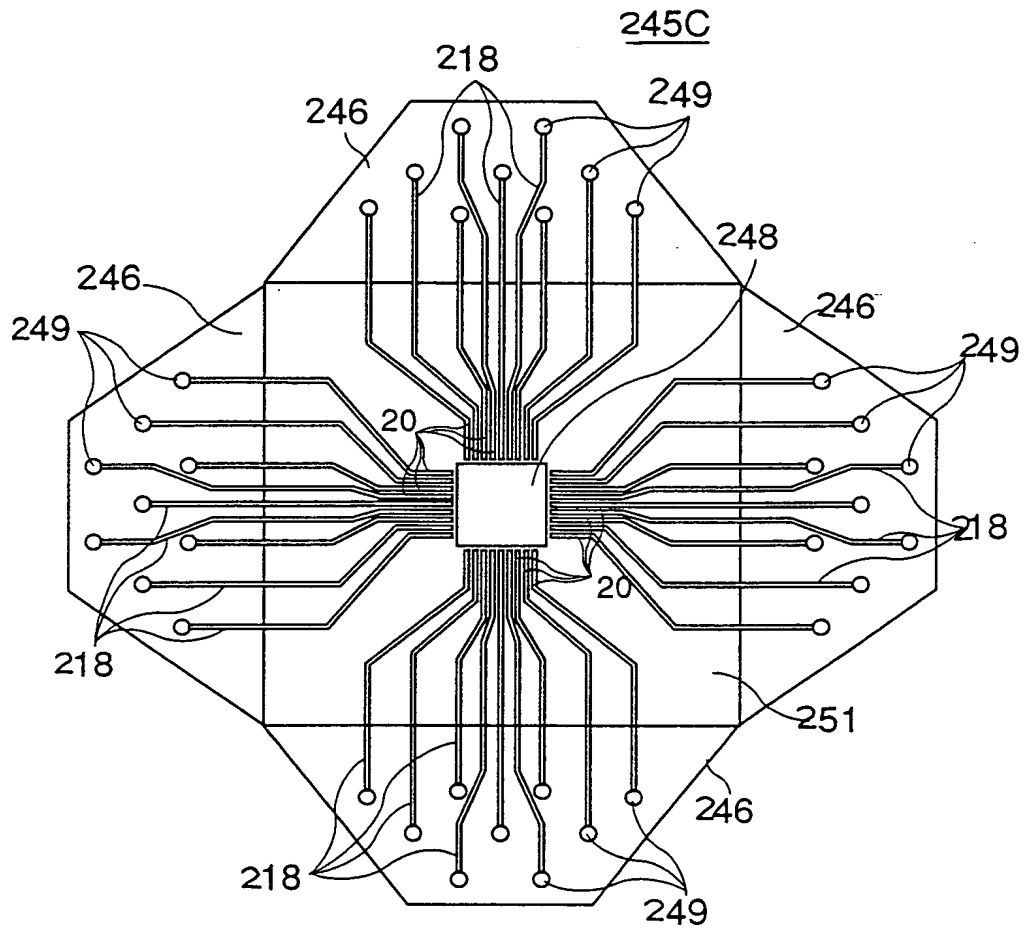


FIG. 106

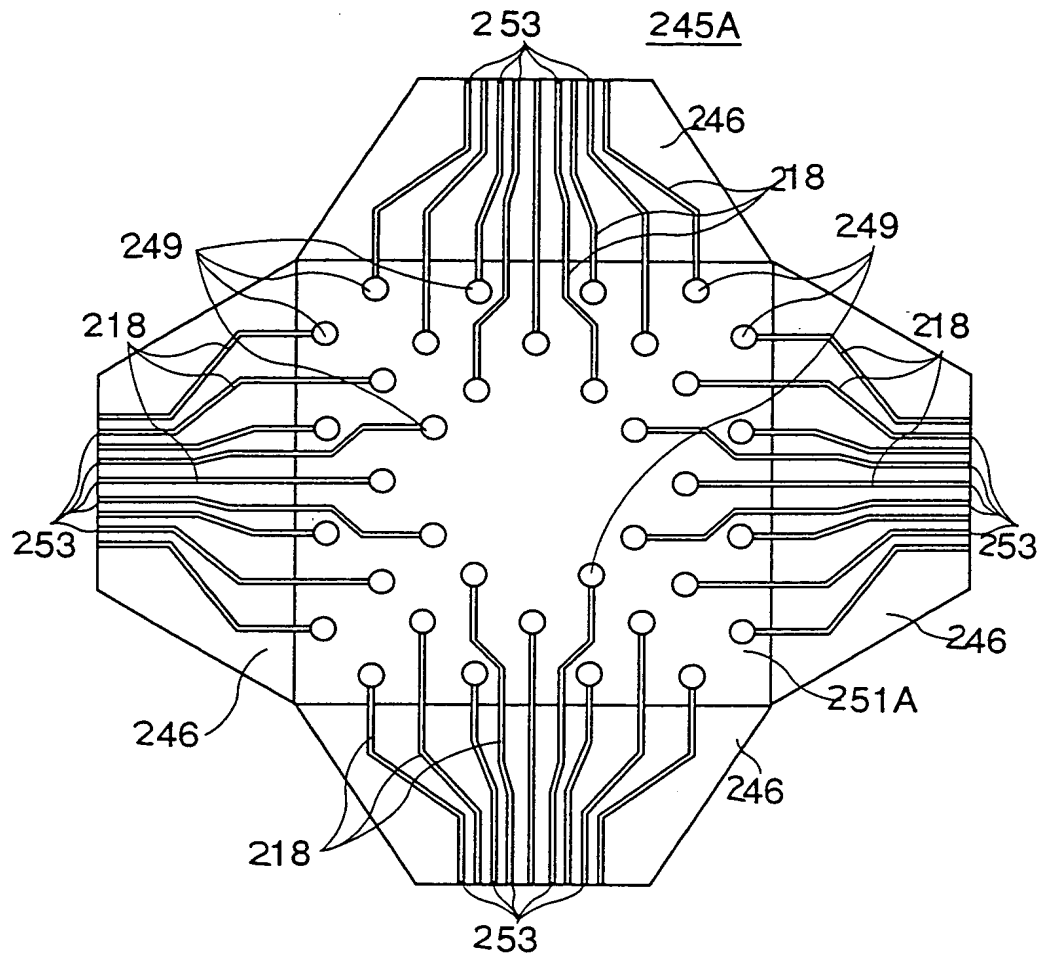


FIG. 107

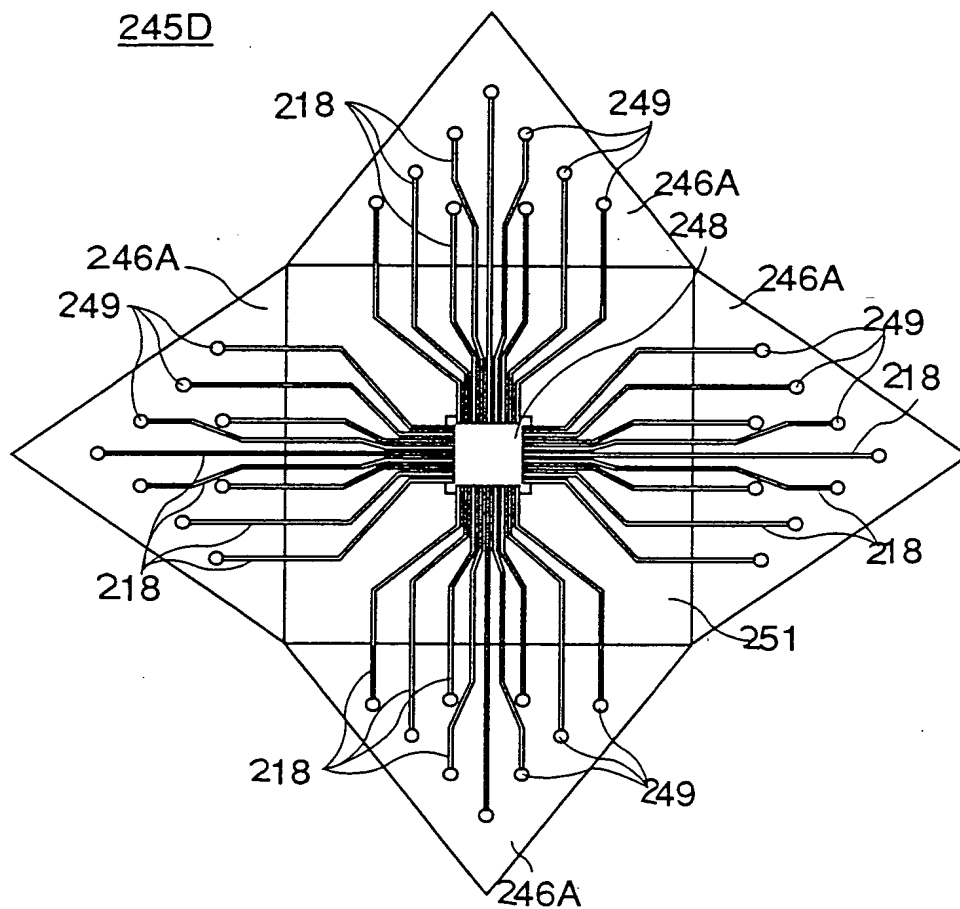


FIG. 108

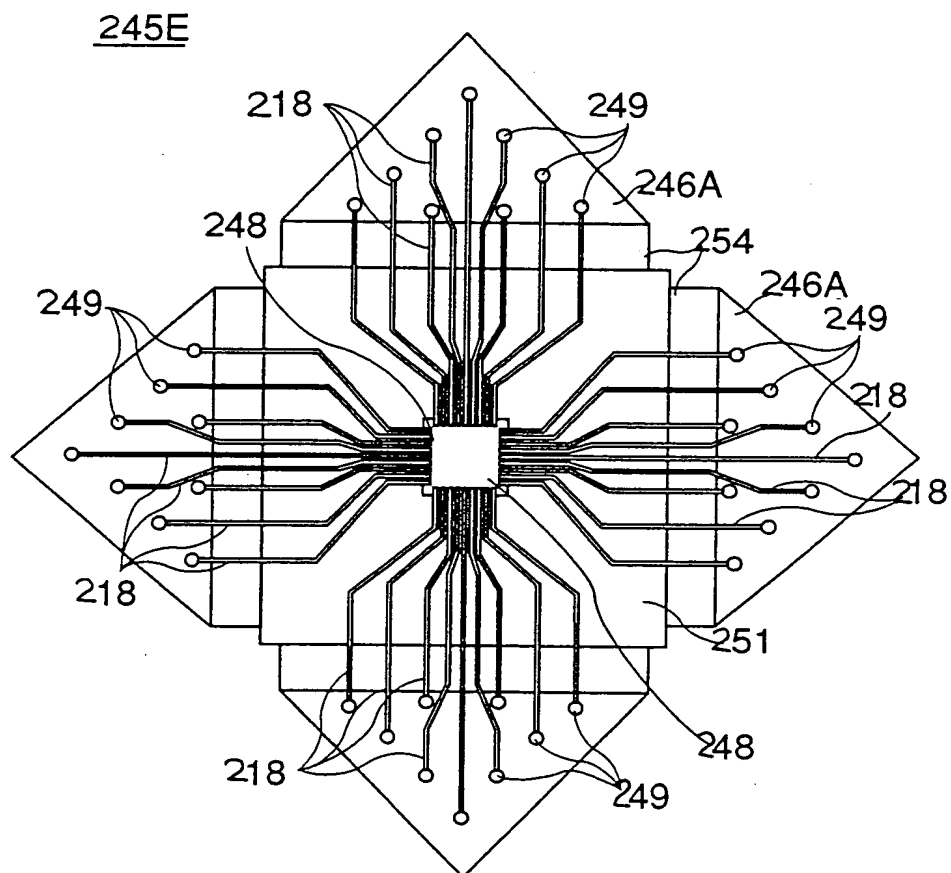


FIG. 109

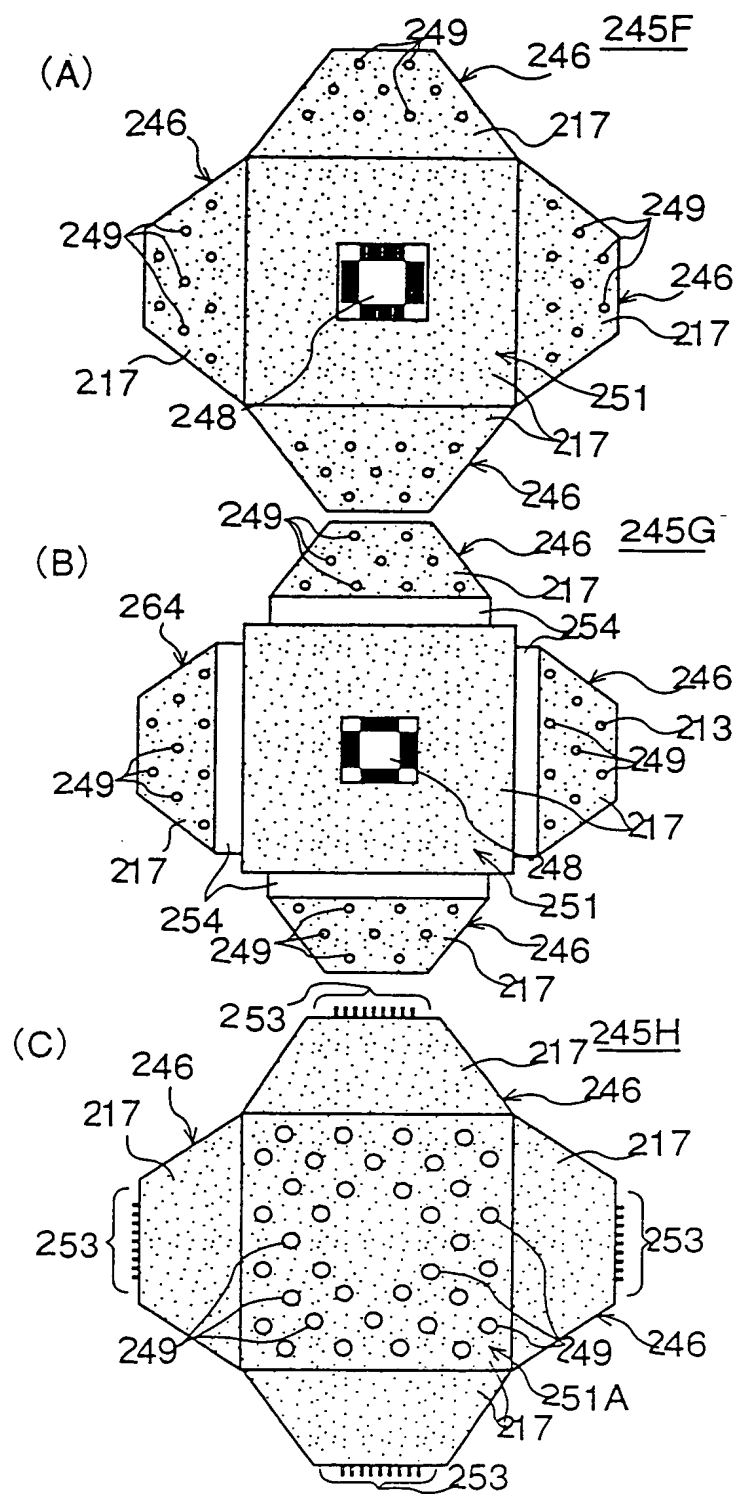




FIG. 110

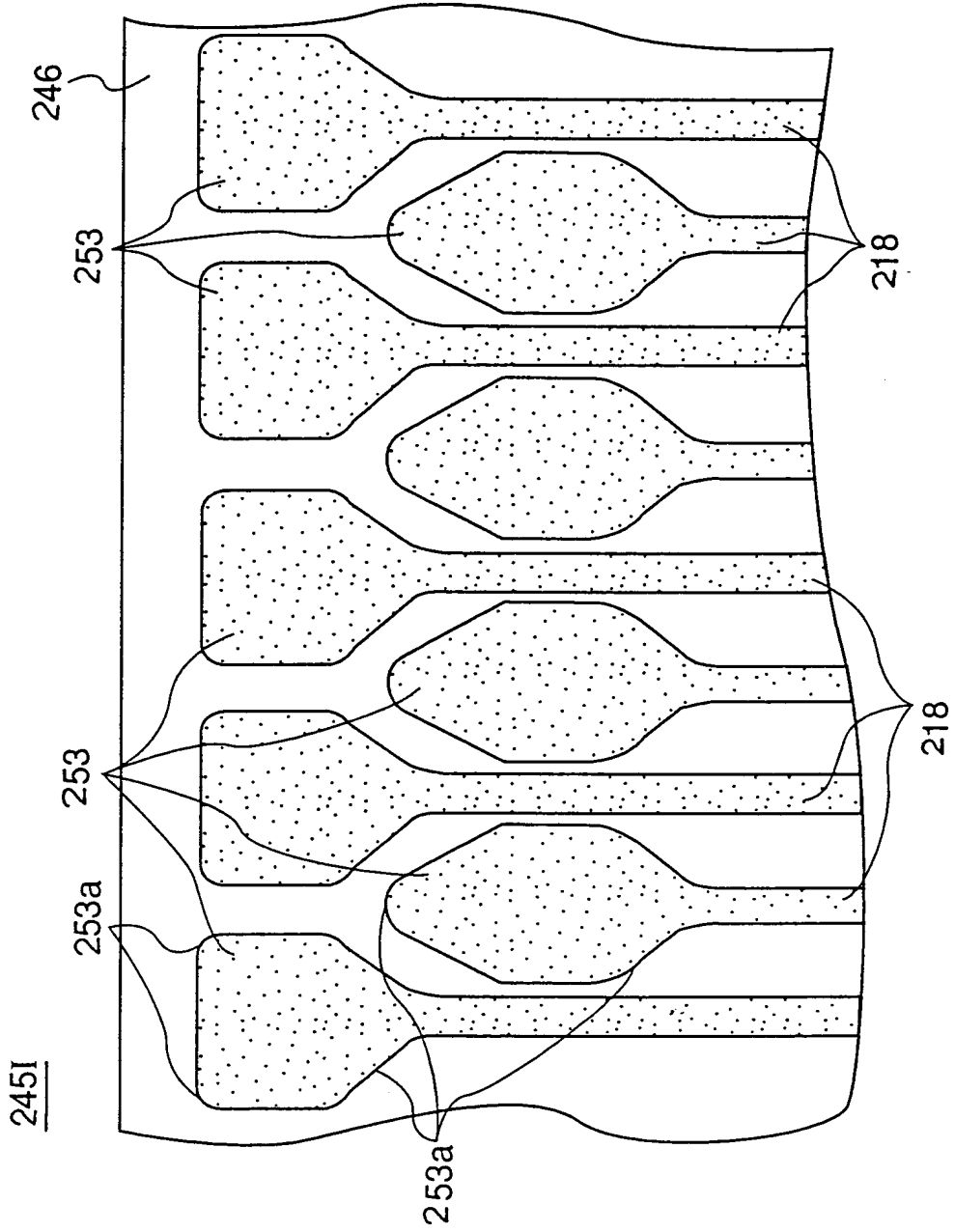
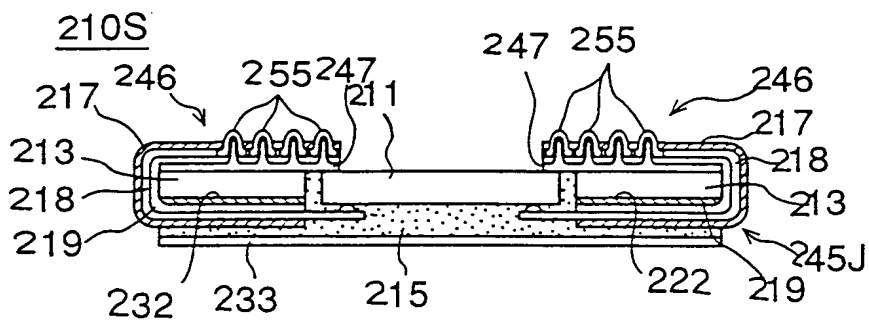


FIG. 111



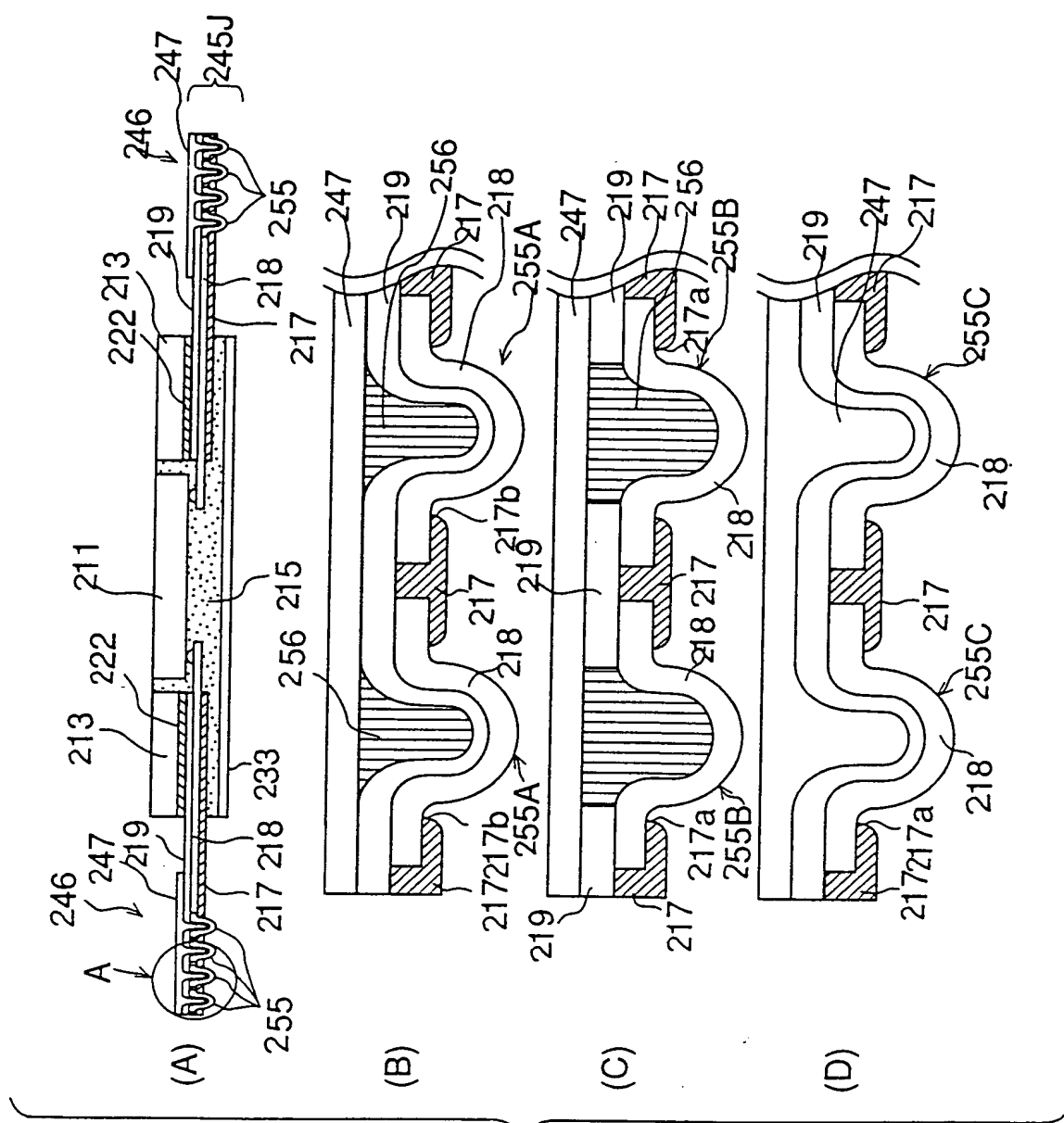


FIG. 113

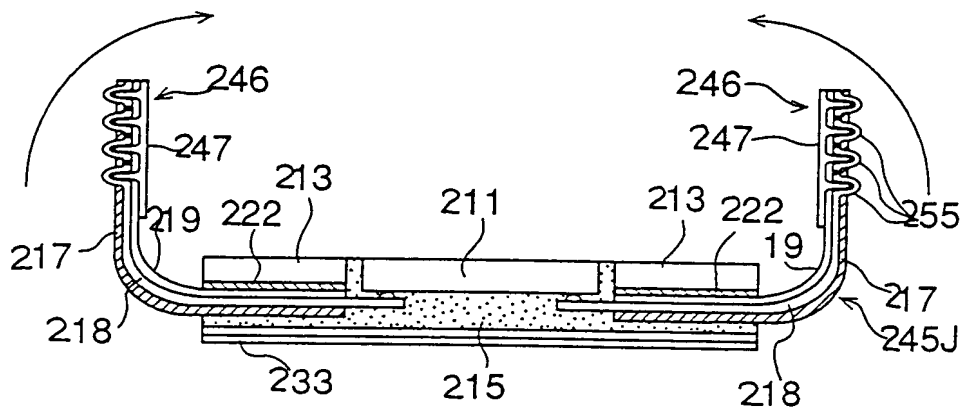


FIG. 114

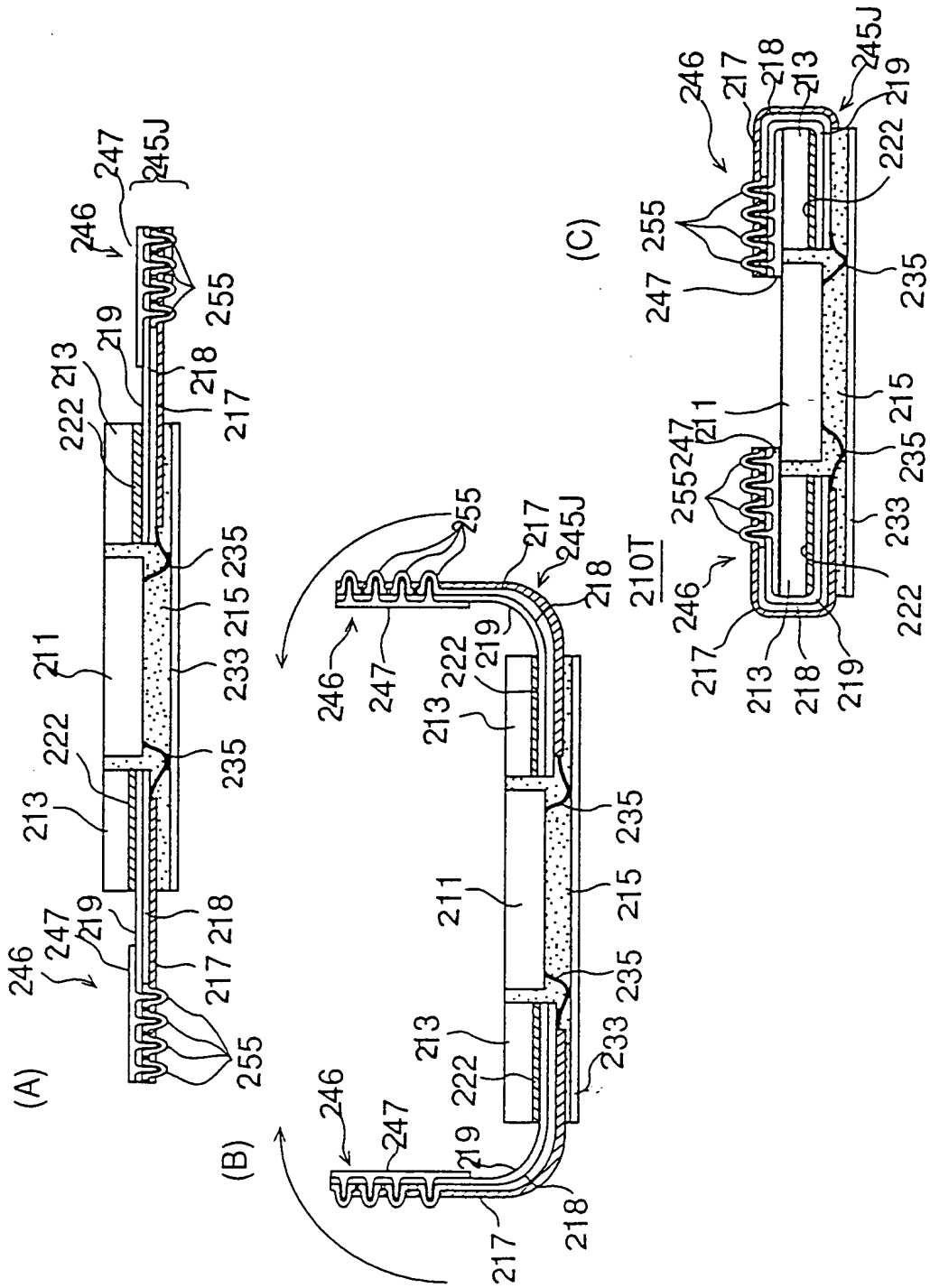


FIG. 115

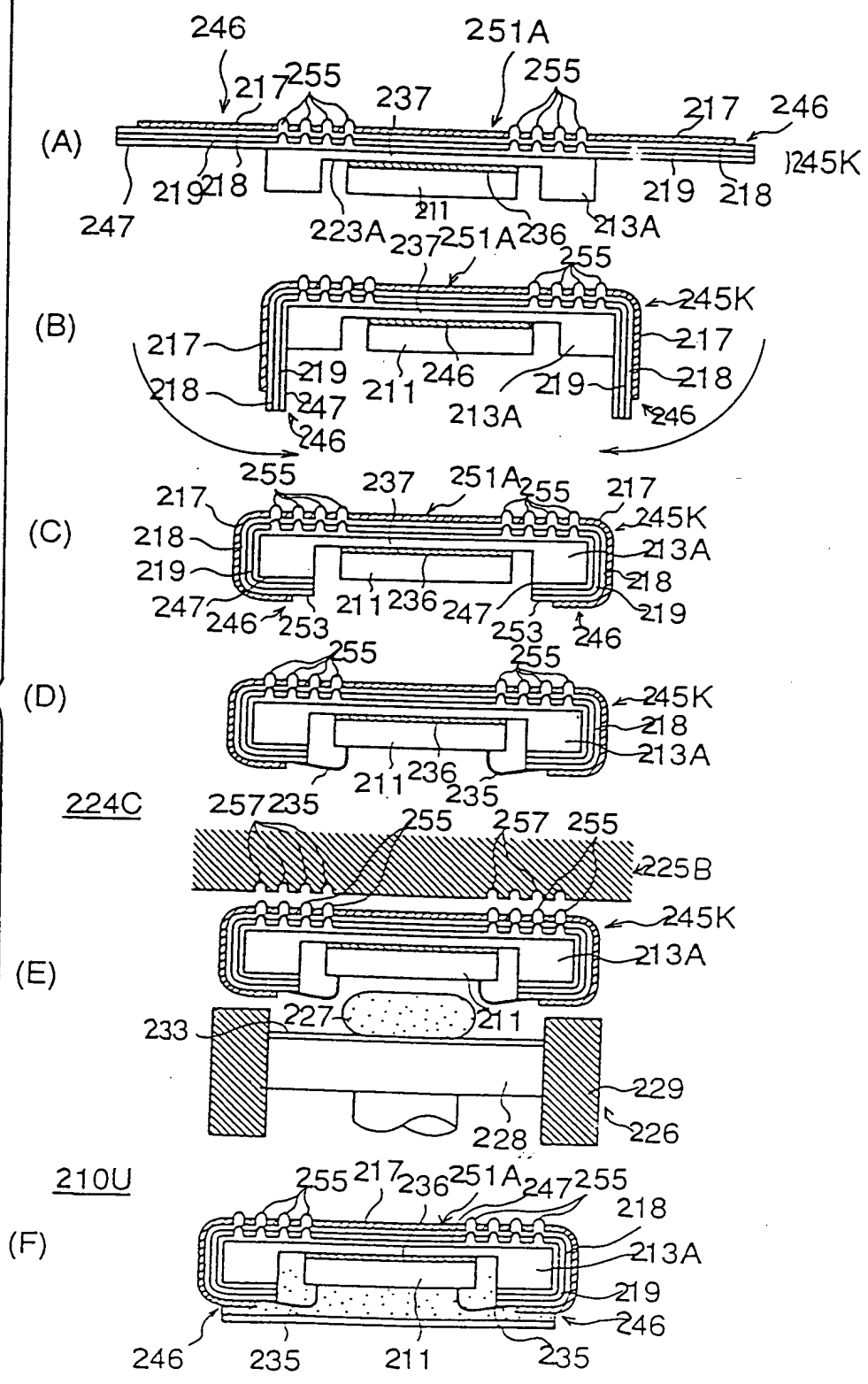


FIG. 116

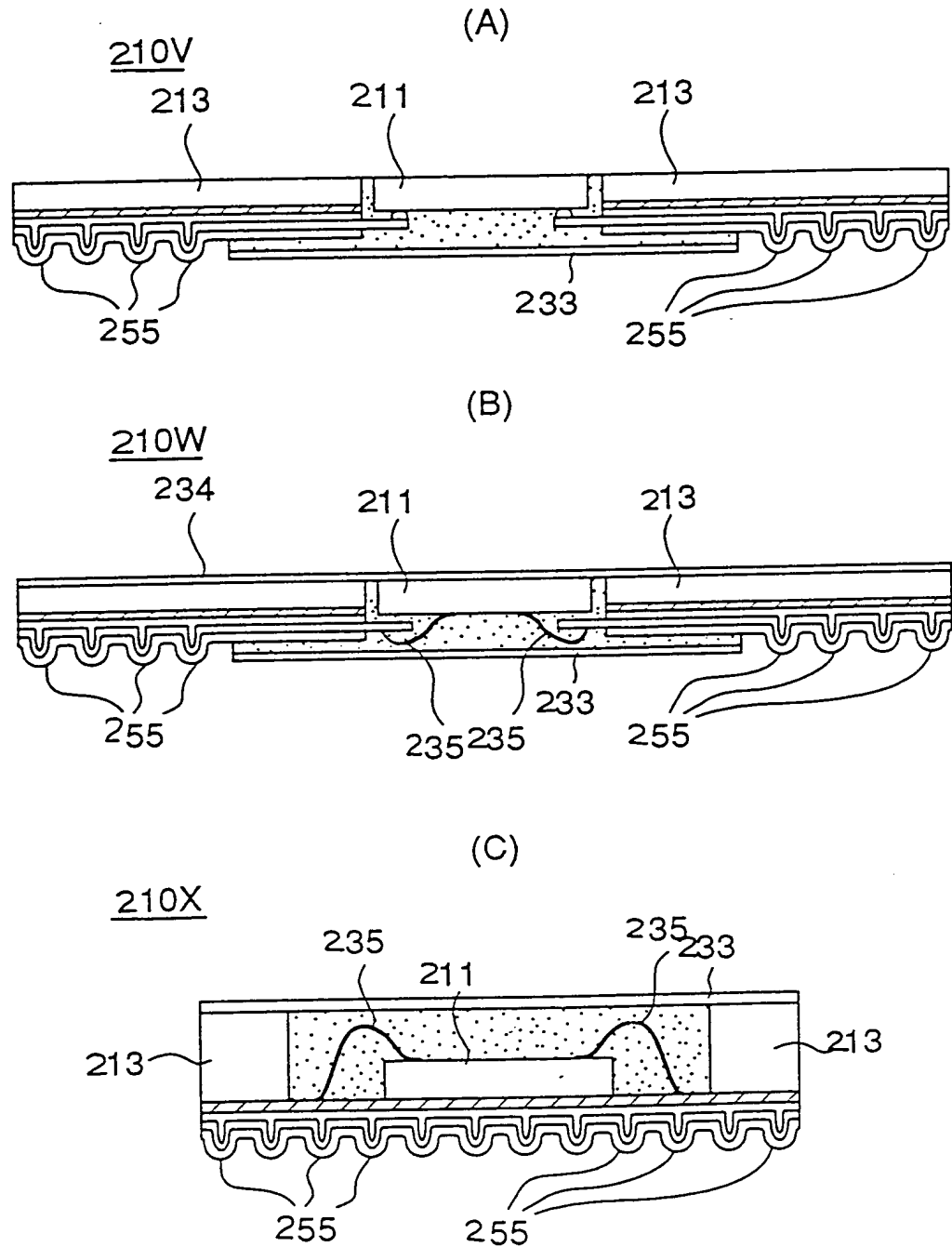


FIG. 117

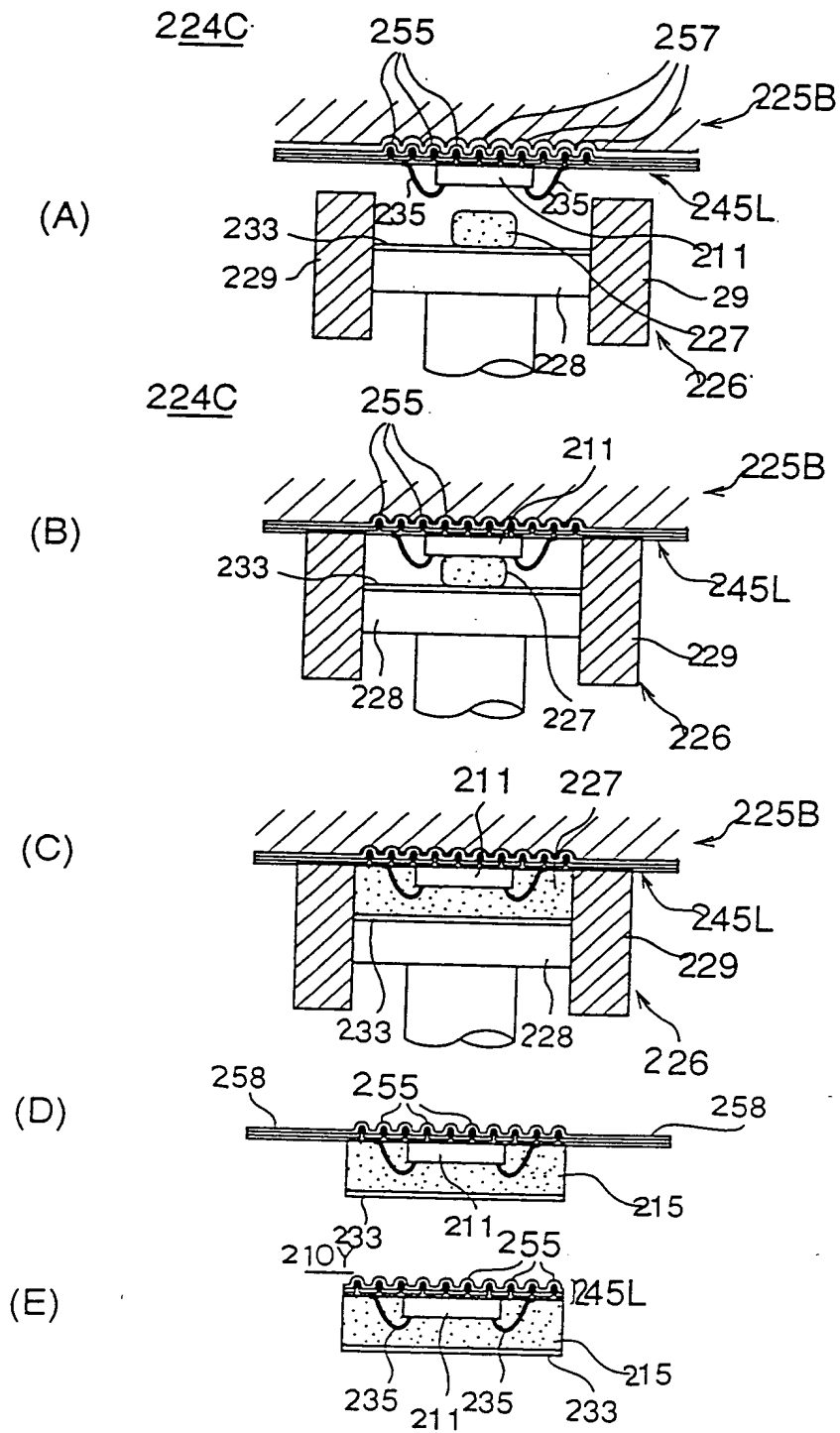




FIG. 118

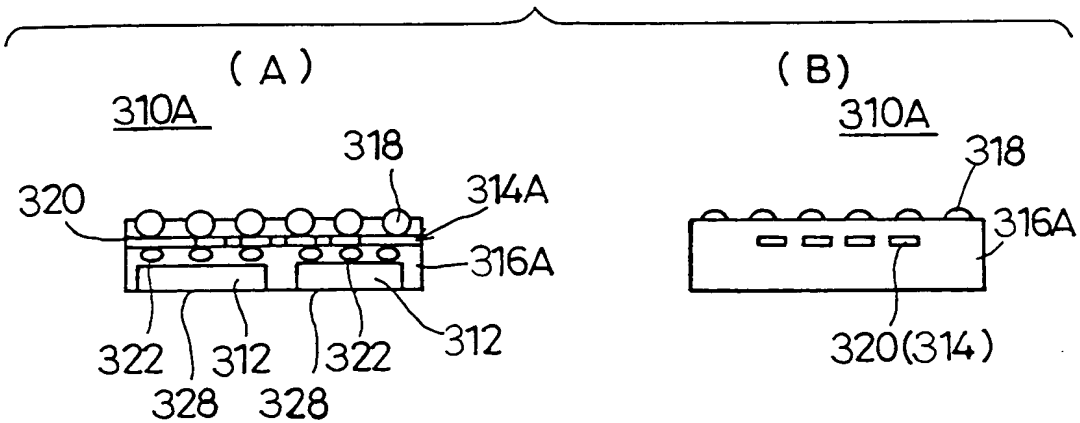


FIG. 119

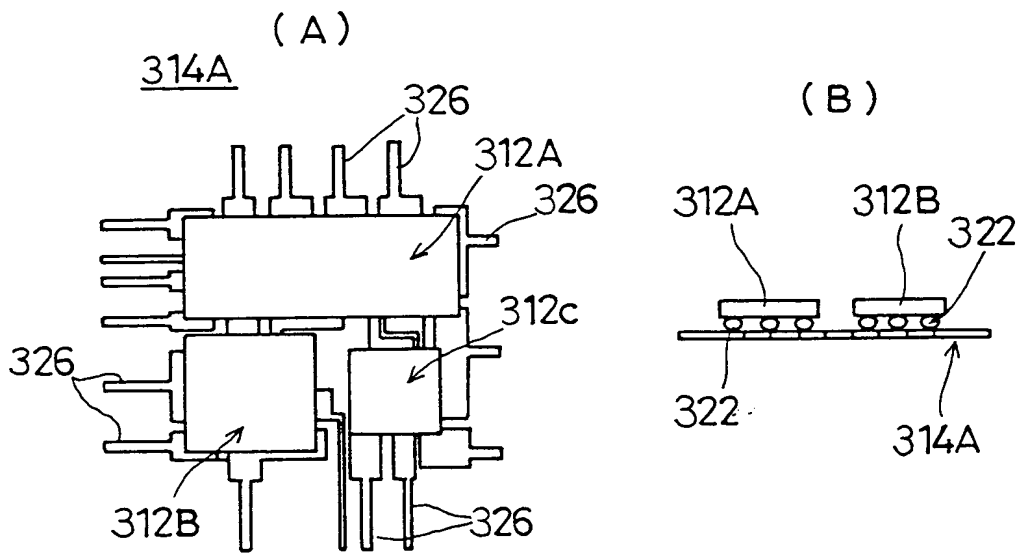
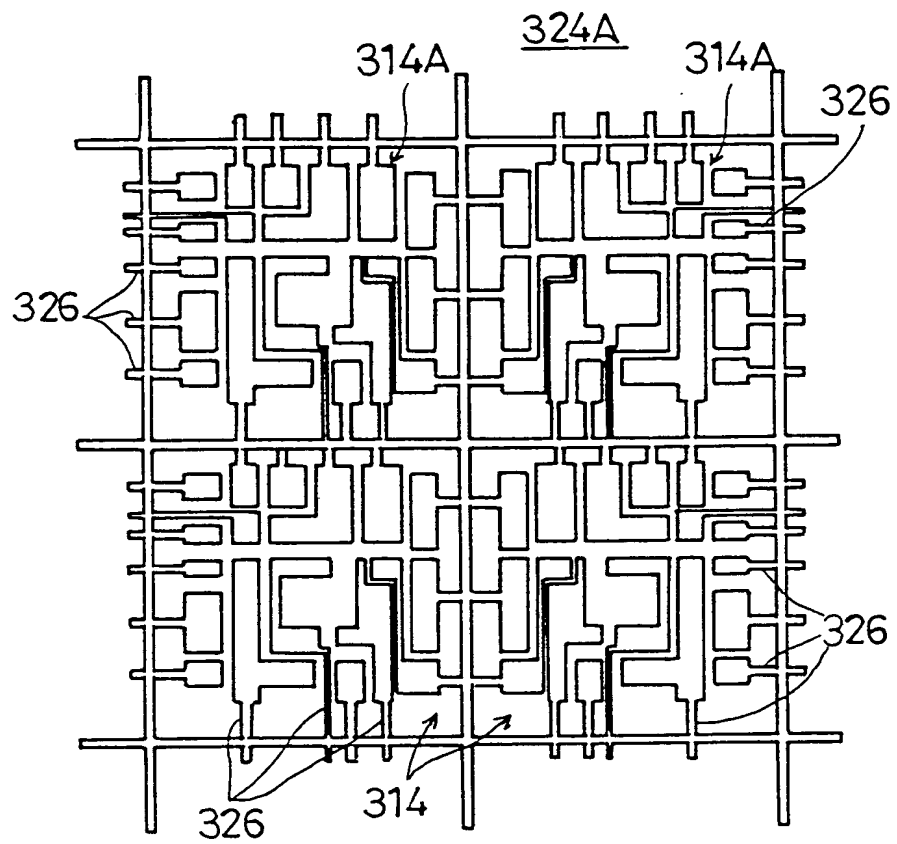


FIG. 120

(A)



(B)

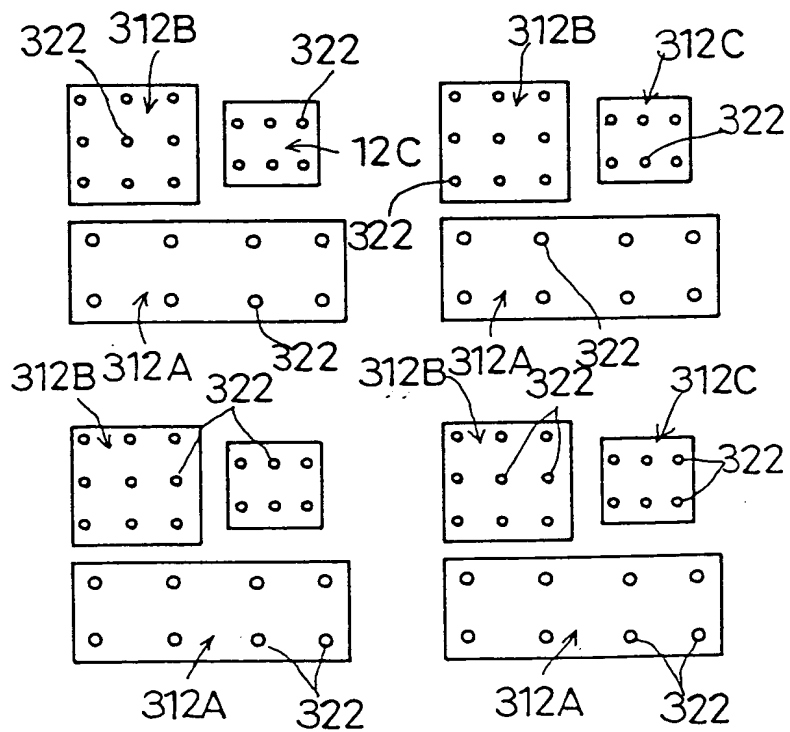


FIG. 121

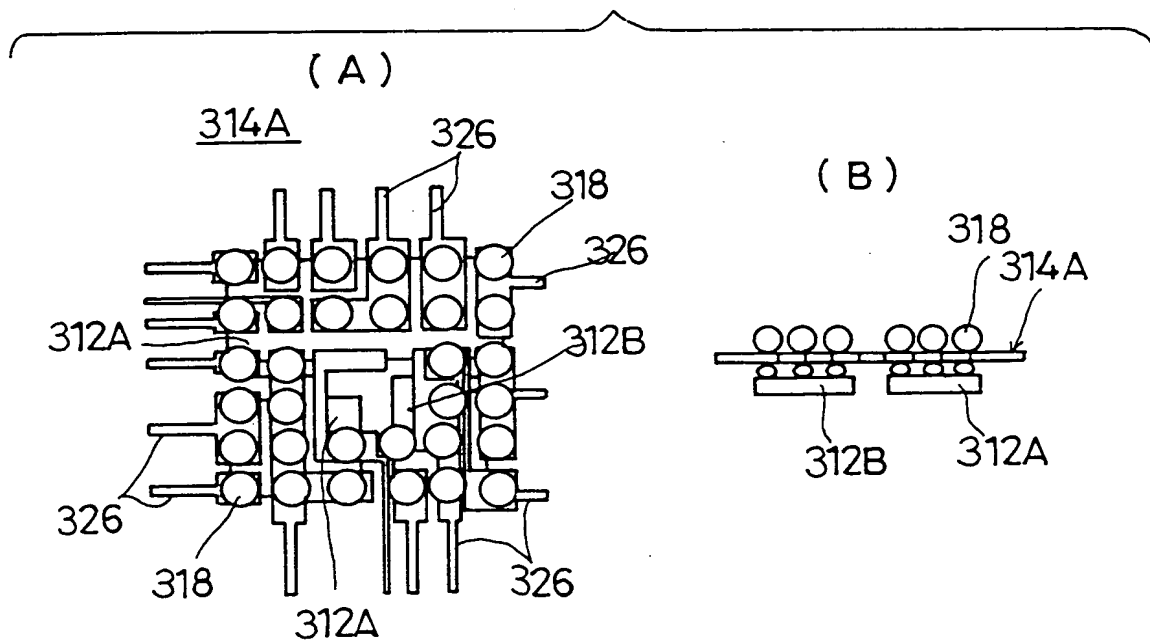


FIG. 122

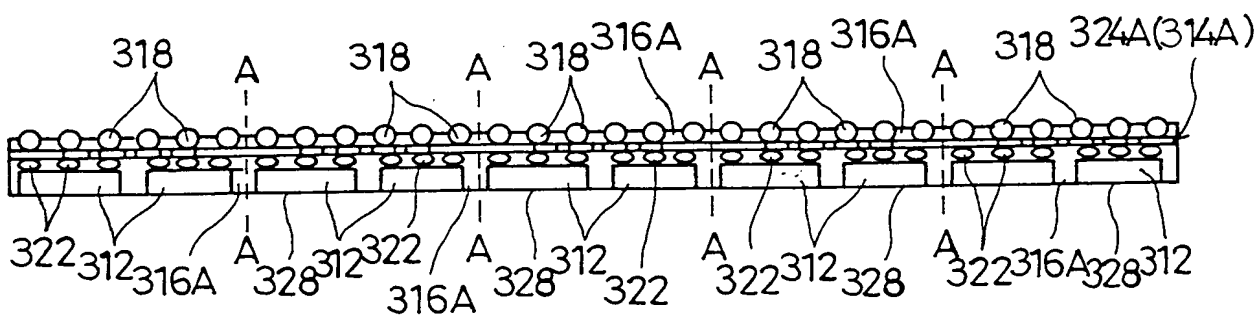


FIG. 123

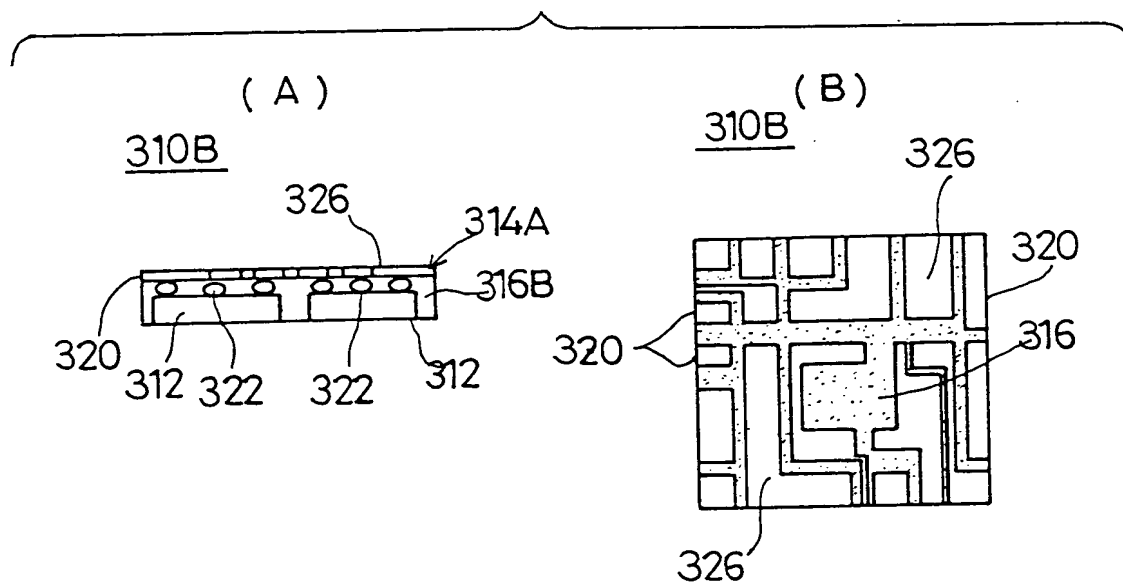


FIG. 124

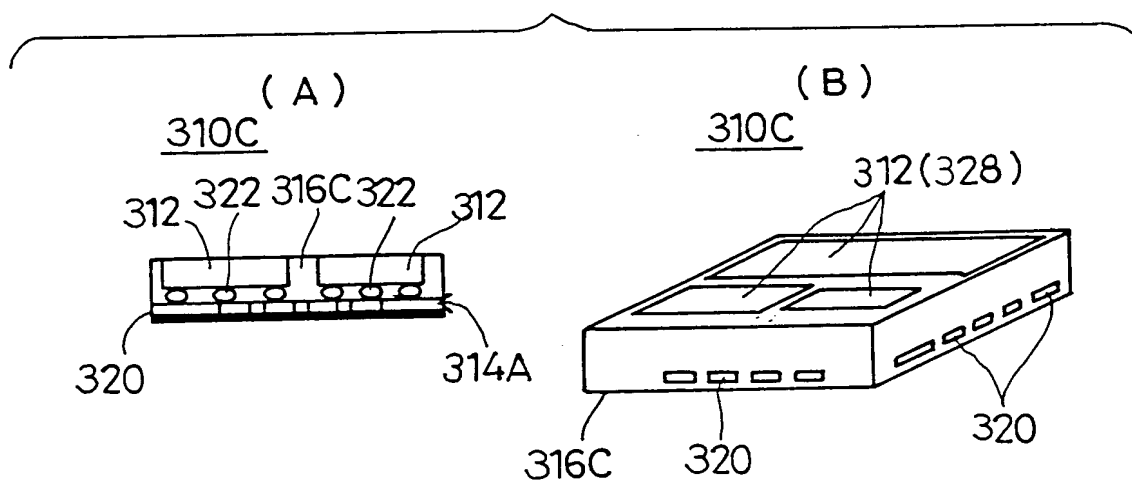


FIG. 125

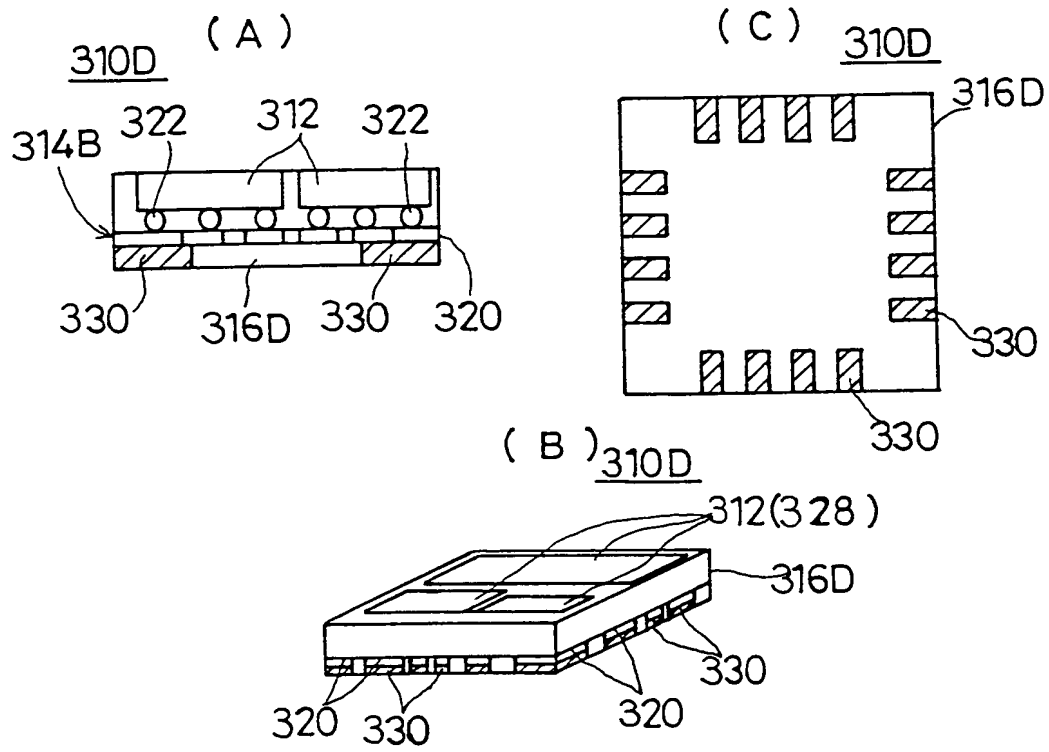


FIG. 126

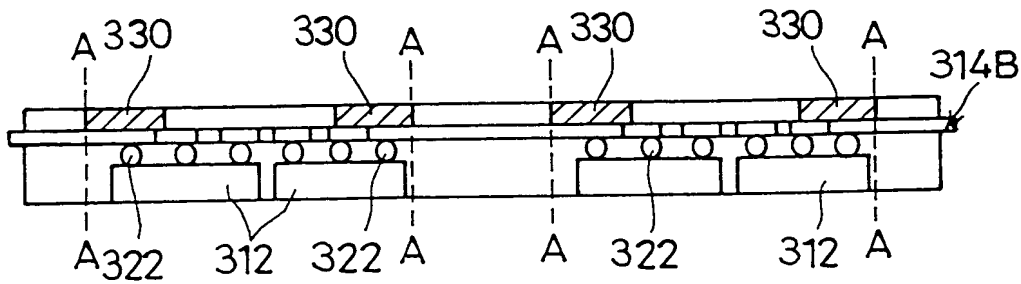
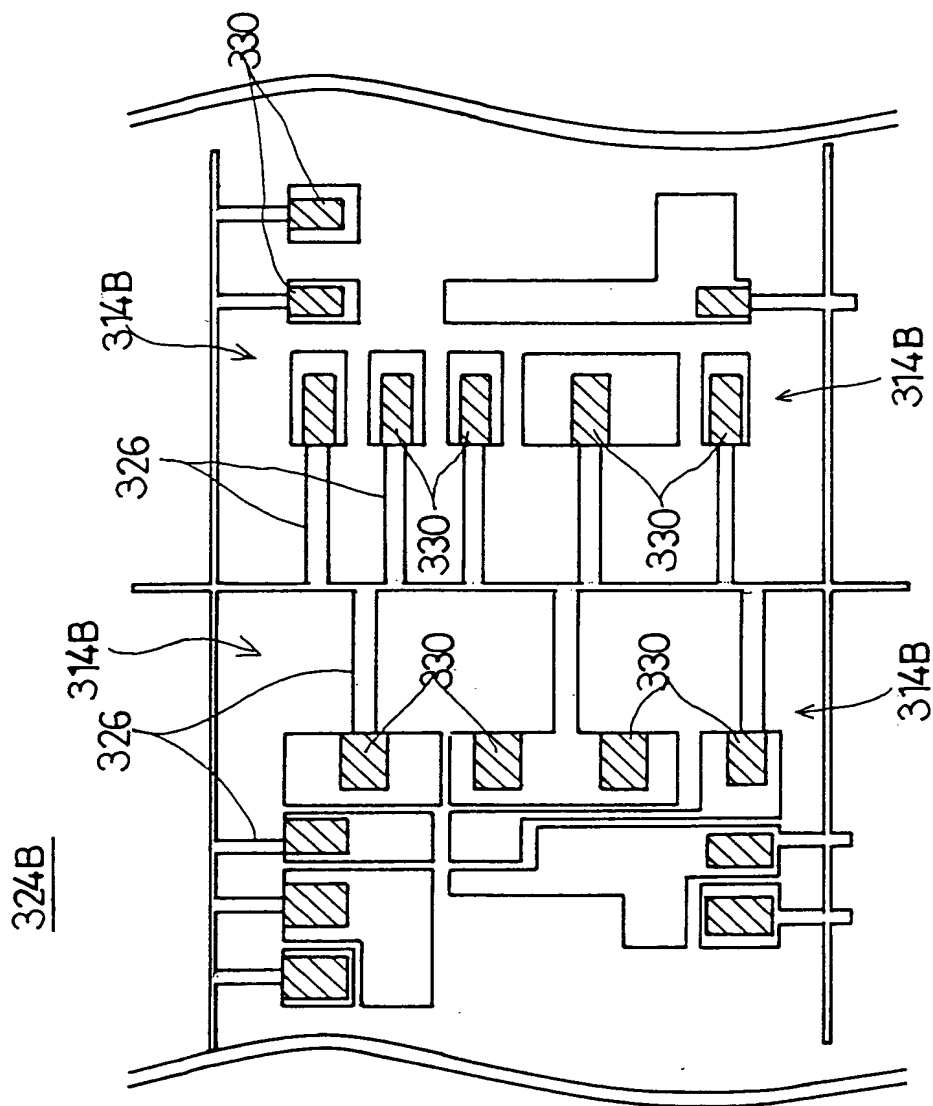


FIG. 127



303150 30302000

FIG. 128

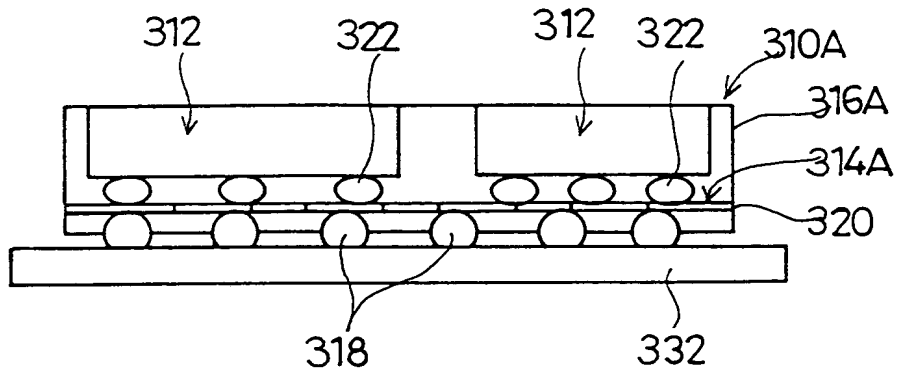


FIG. 129

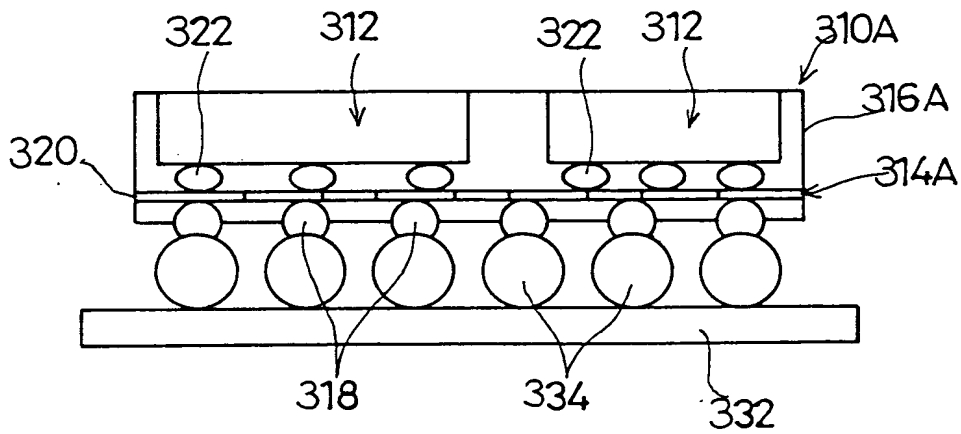


FIG. 130

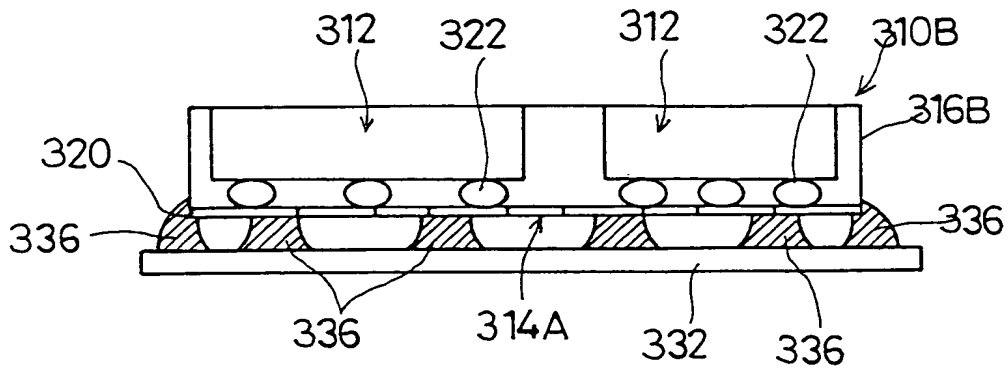


FIG. 131

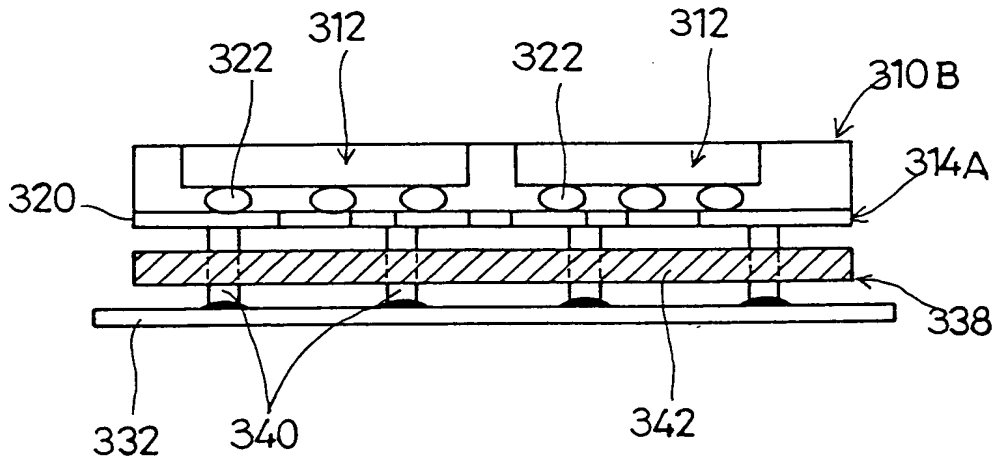




FIG. 132

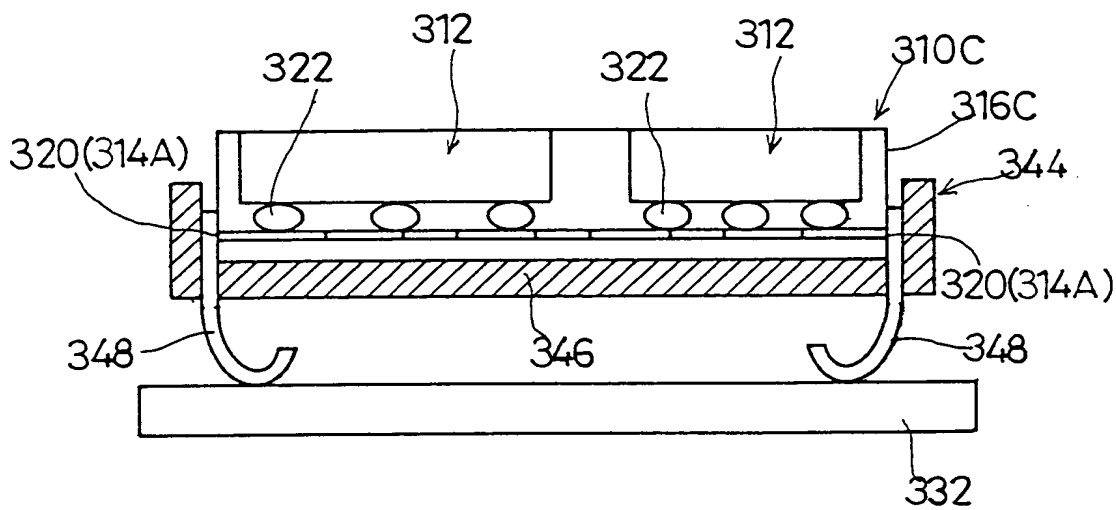


FIG. 133

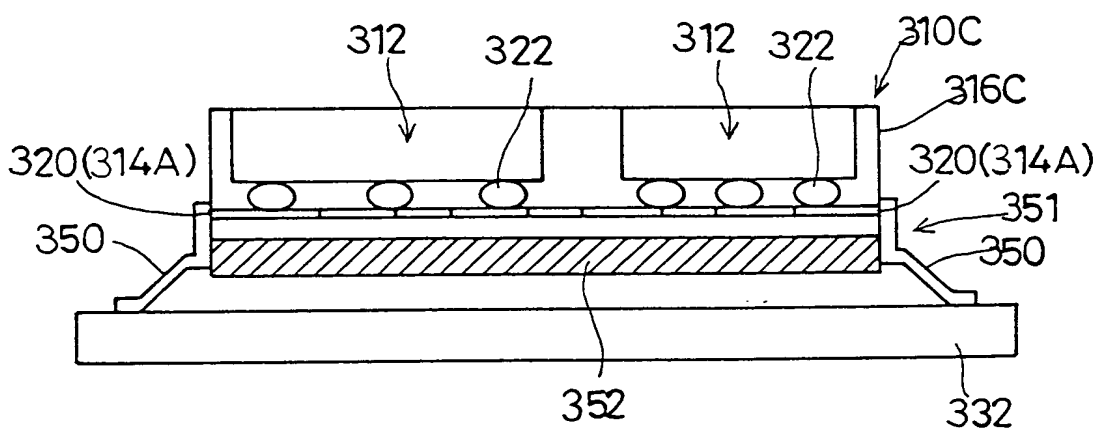


FIG. 134

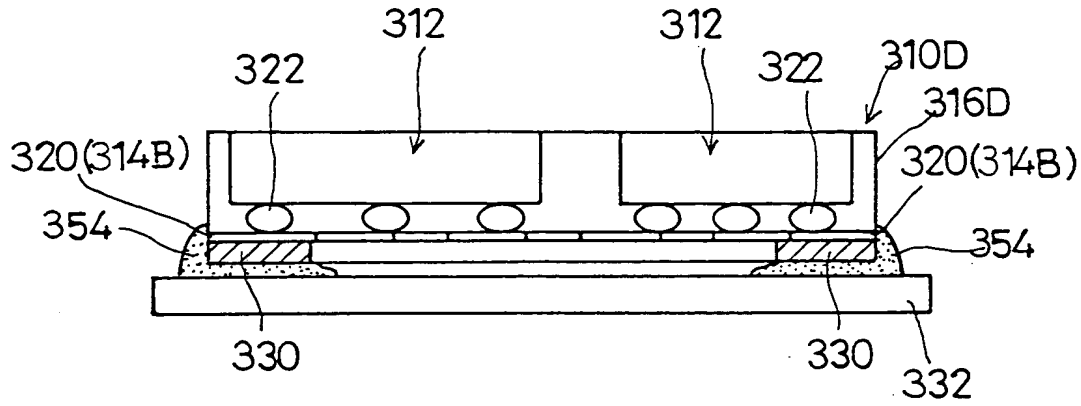


FIG. 135

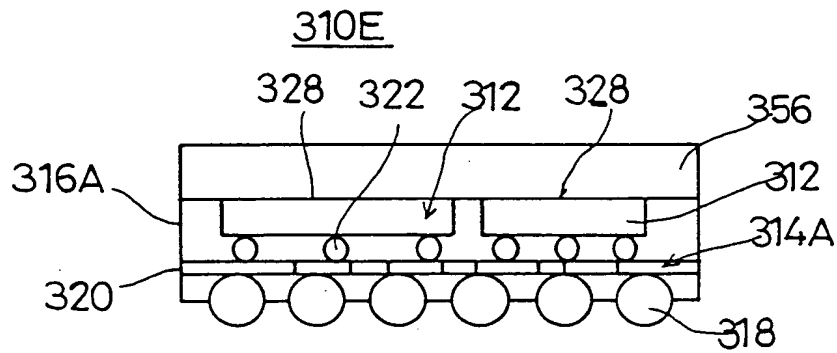
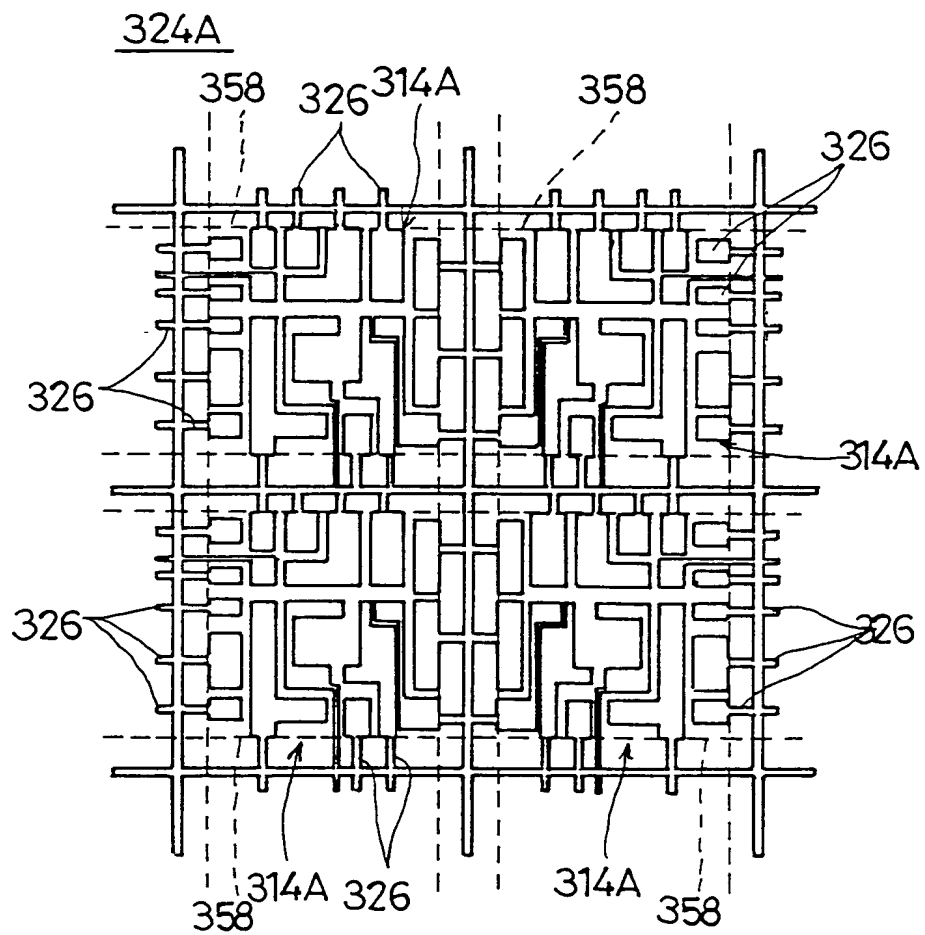


FIG. 136



077027000

FIG. 137

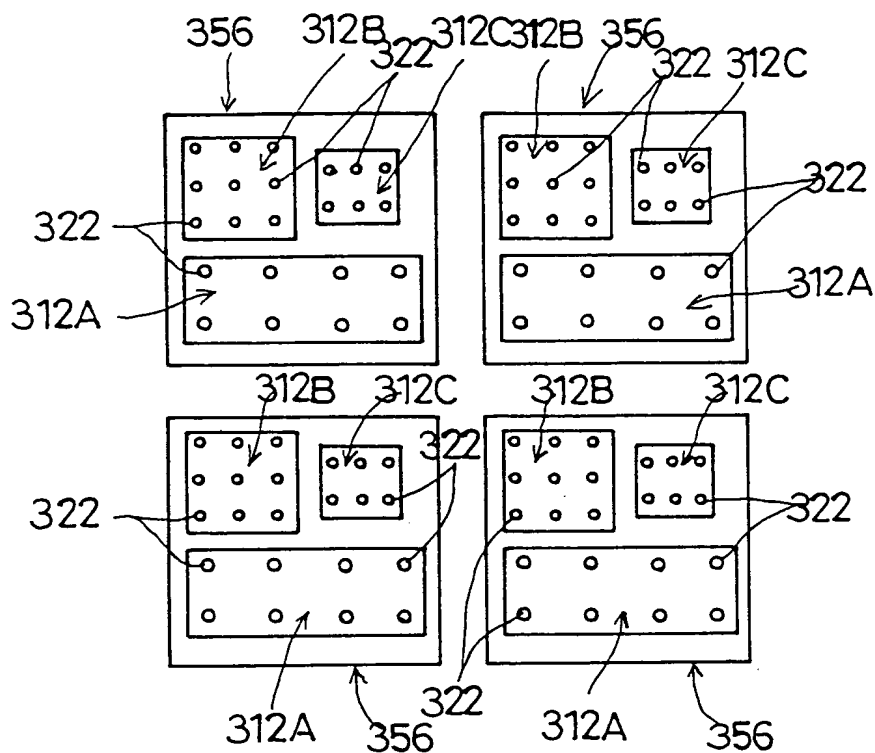


FIG. 138

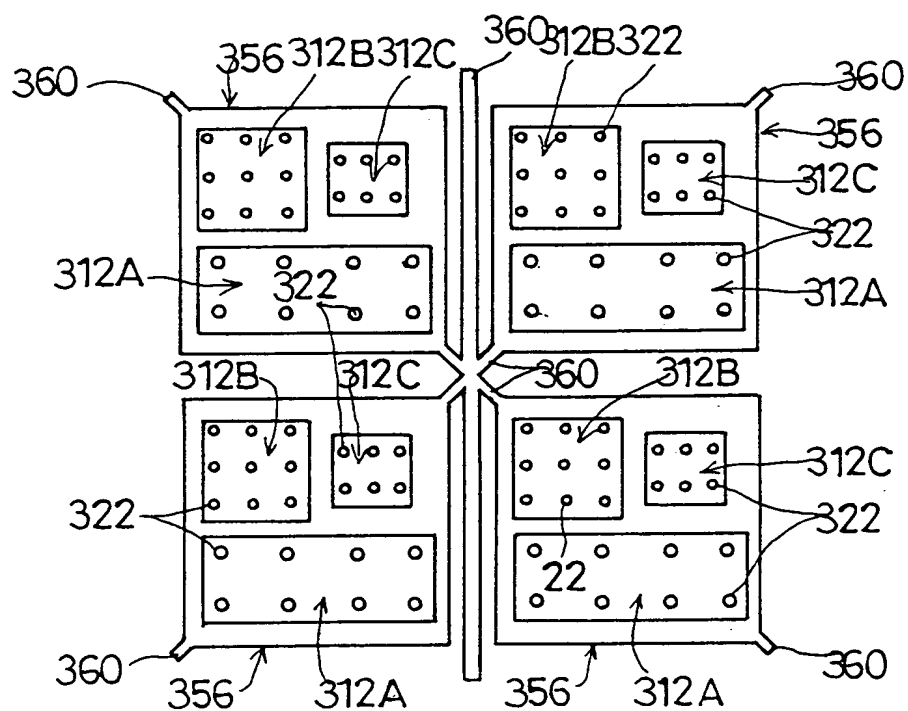


FIG. 139

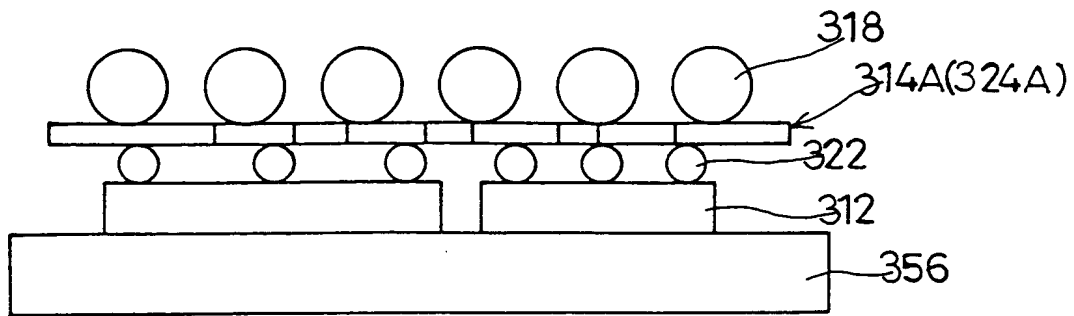


FIG. 140

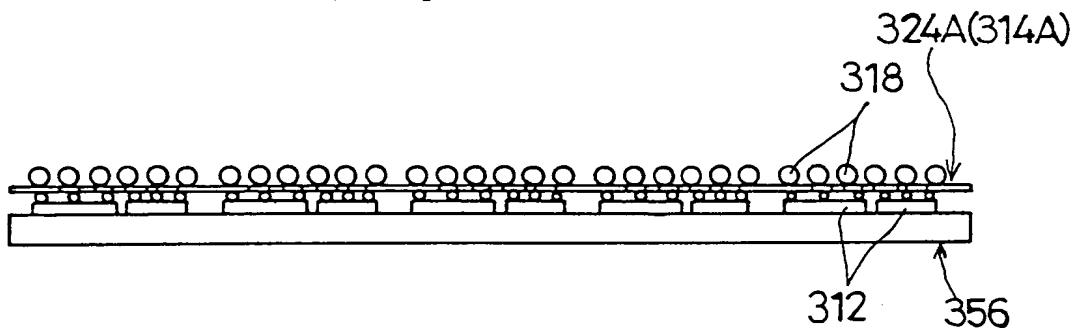


FIG. 141

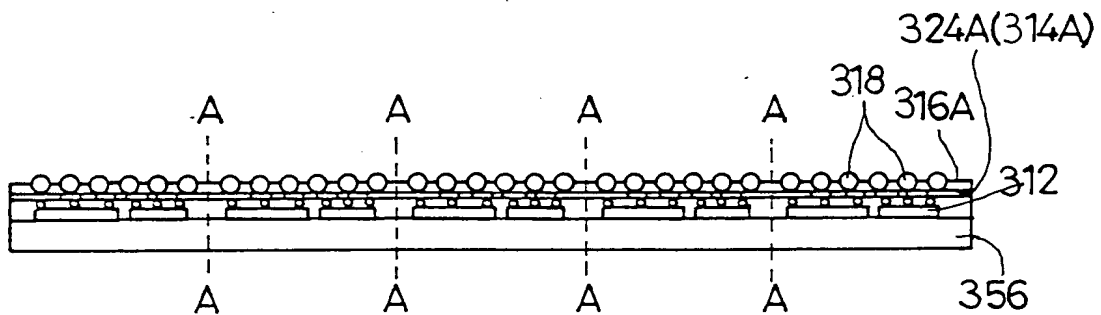


FIG. 142

310F

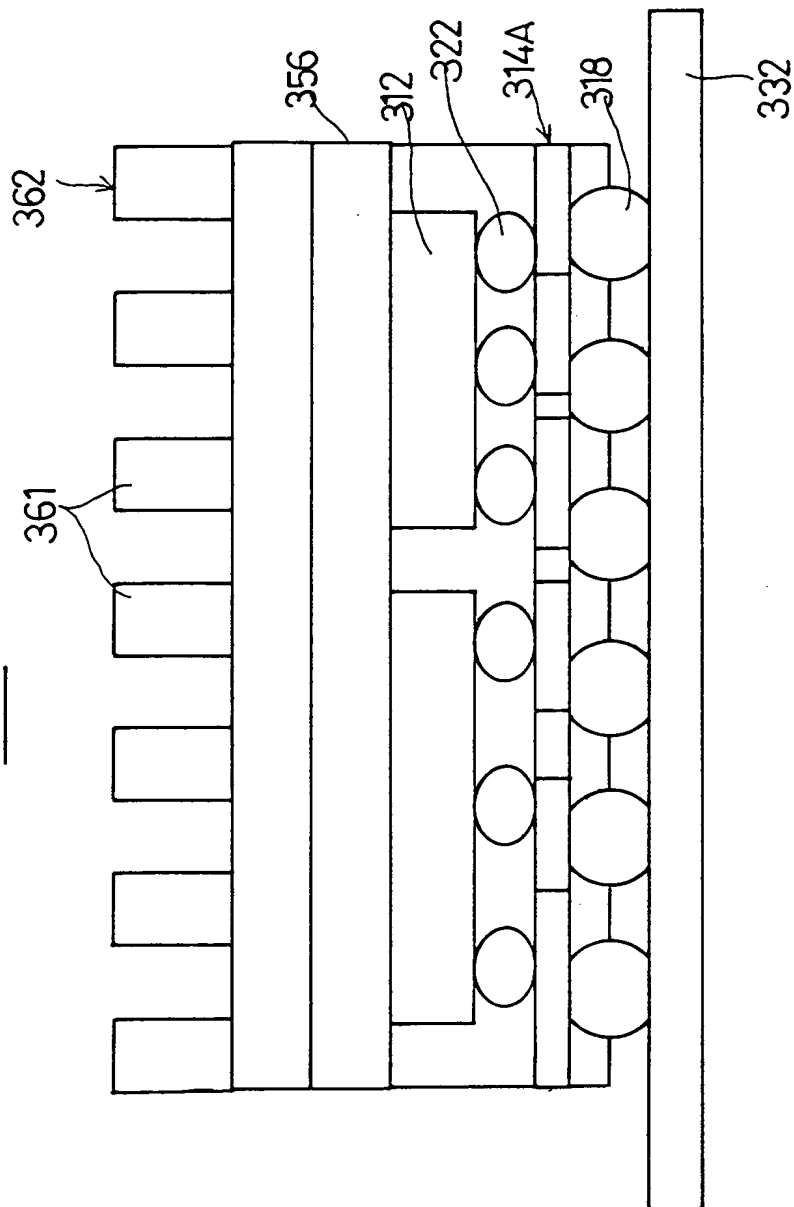


FIG. 143

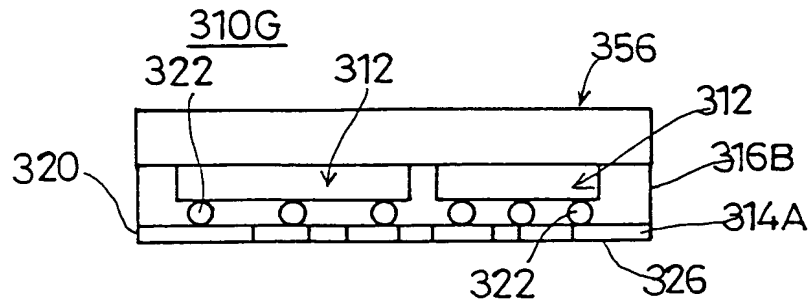


FIG. 144

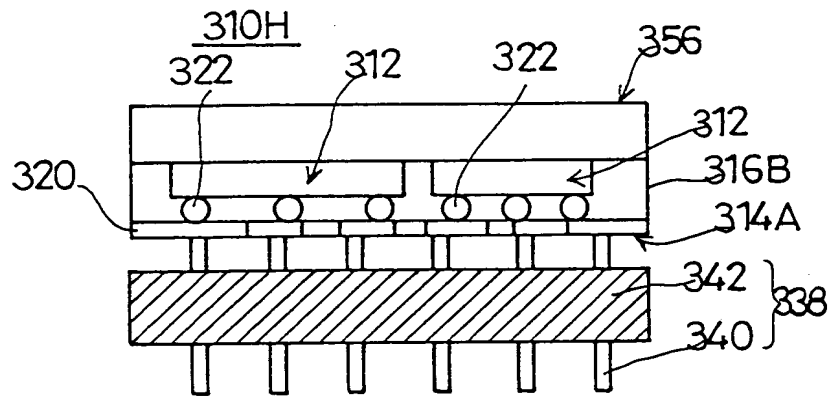


FIG. 145

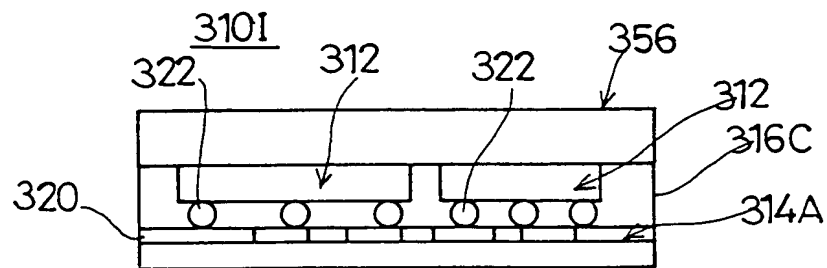


FIG. 146

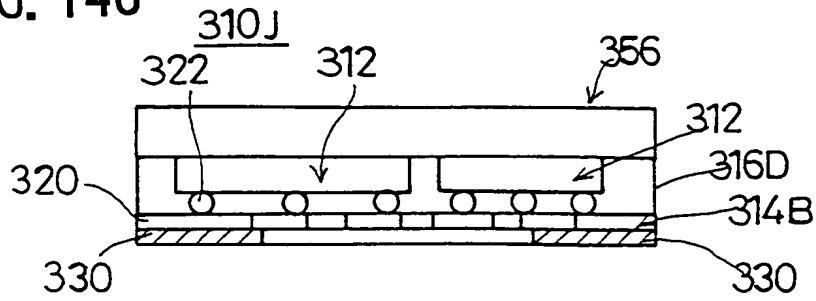


FIG. 147

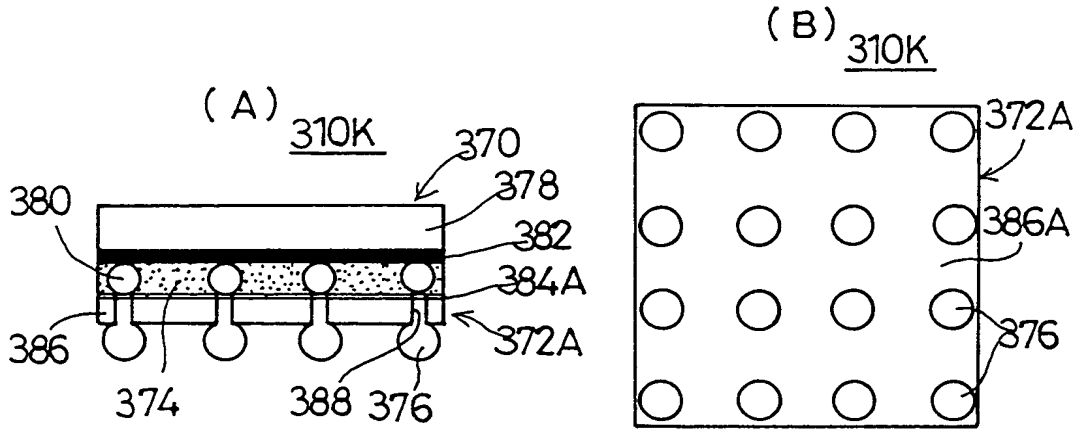


FIG. 148

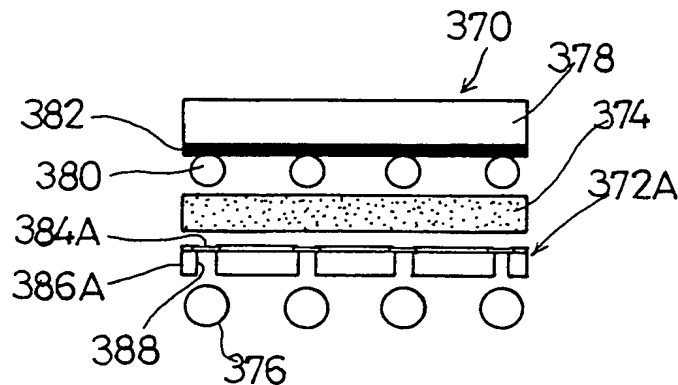




FIG. 149

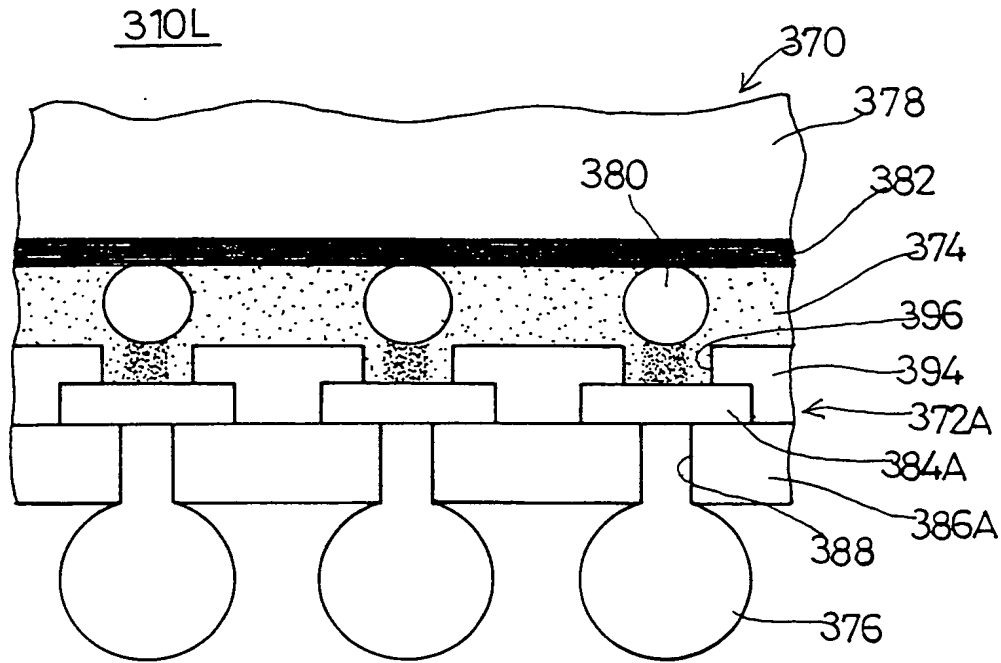


FIG. 150

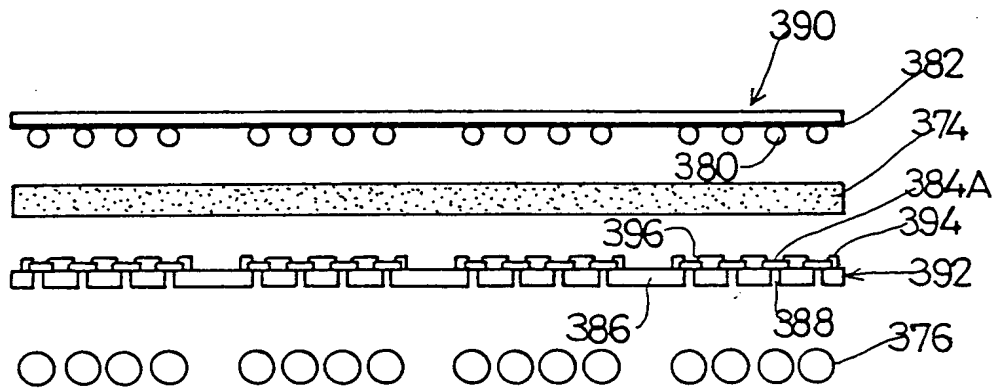


FIG. 151

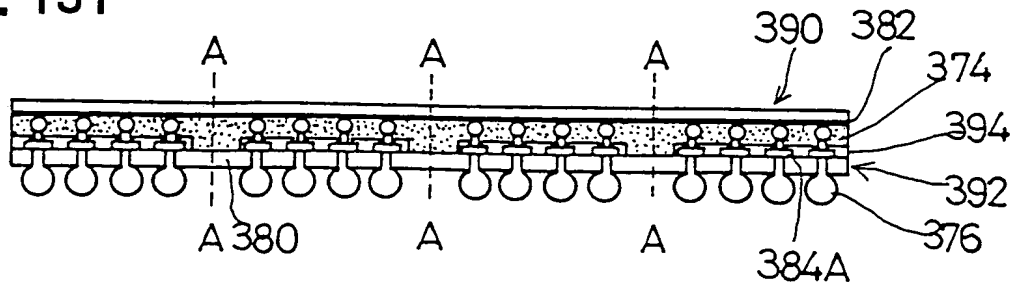


FIG. 152

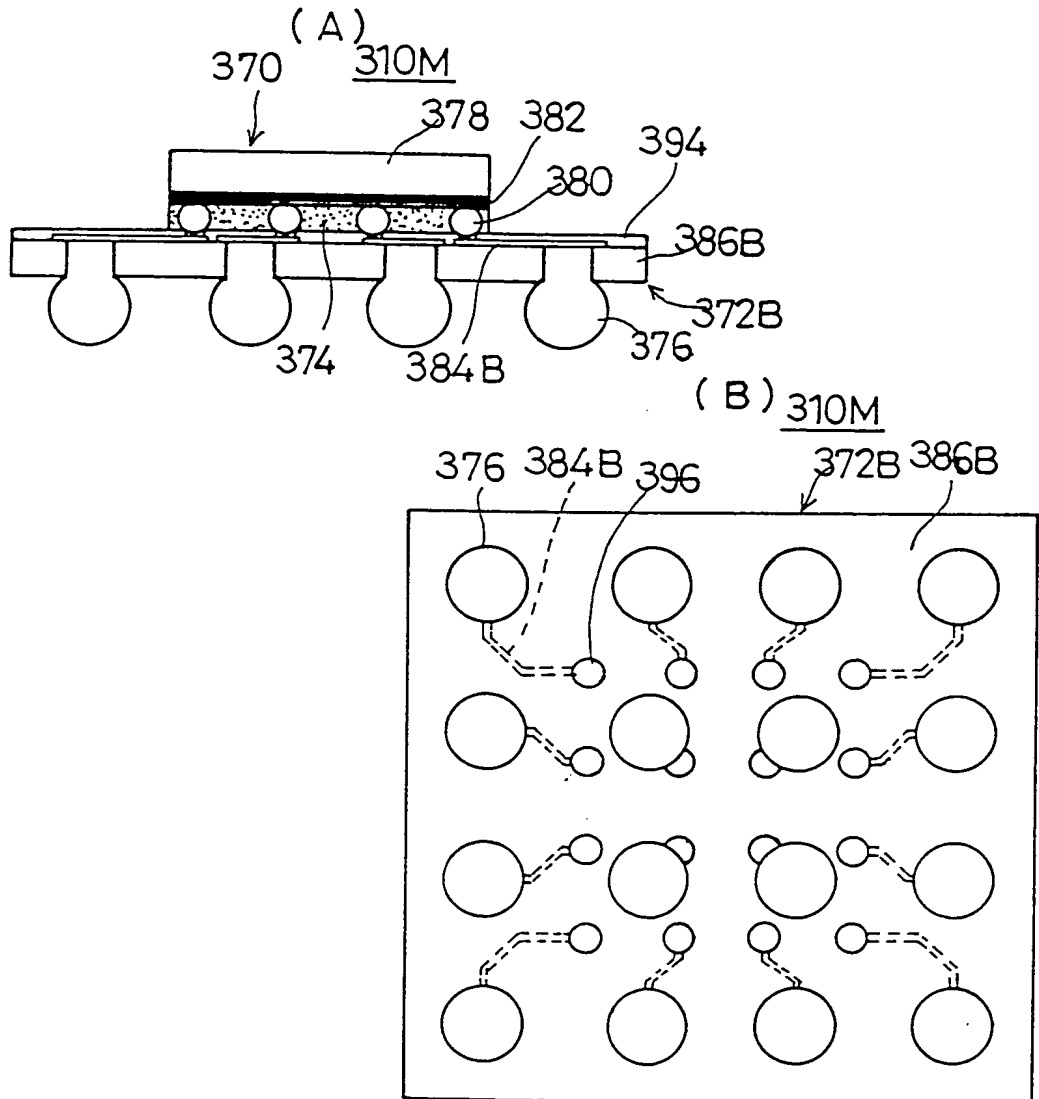


FIG. 153

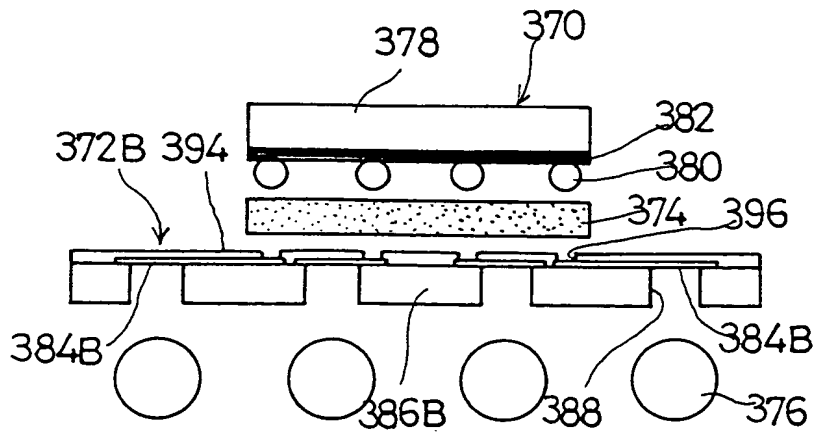


FIG. 154

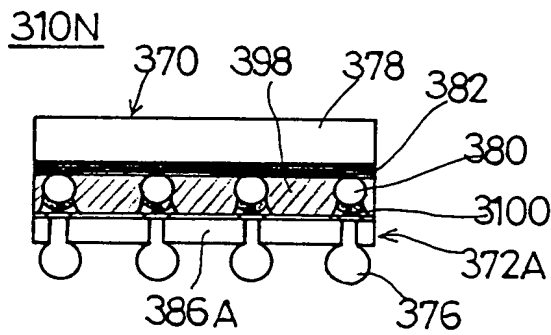


FIG. 155

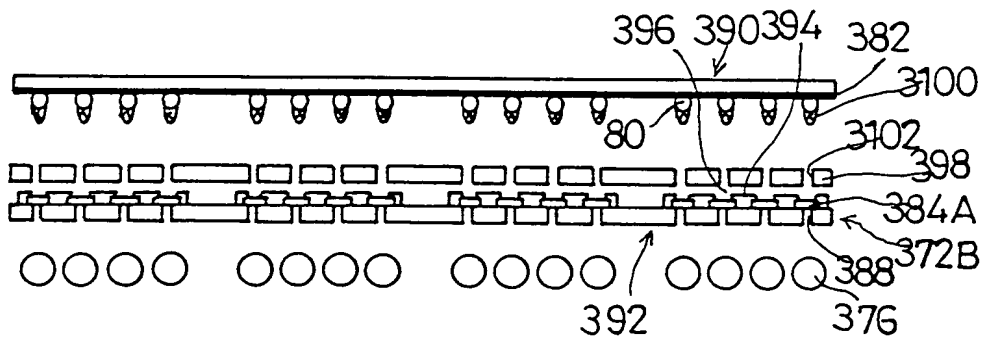


FIG. 156

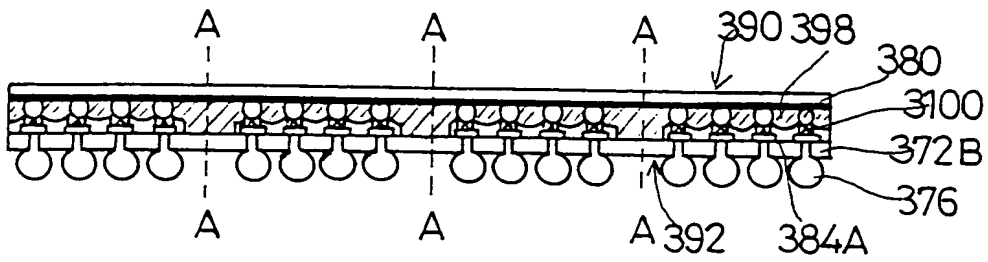


FIG. 157

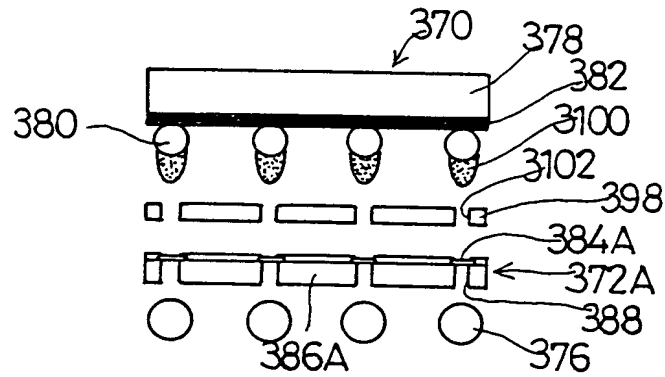
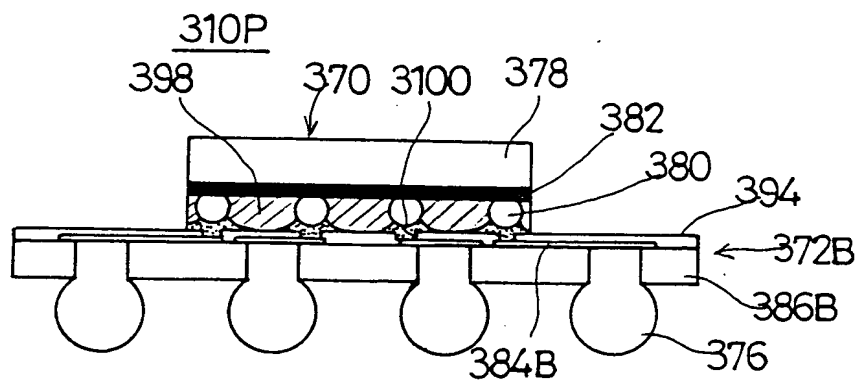


FIG. 158



20250808 09:30:26

FIG. 159

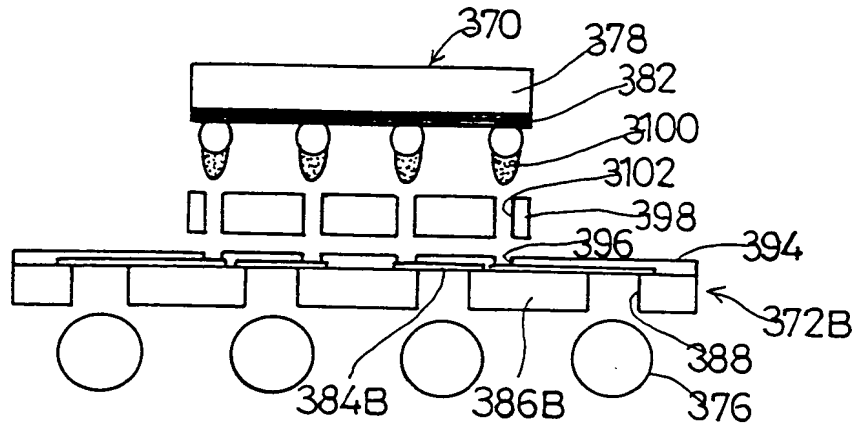


FIG. 160

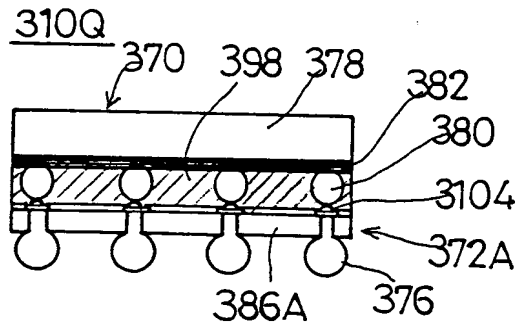


FIG. 161

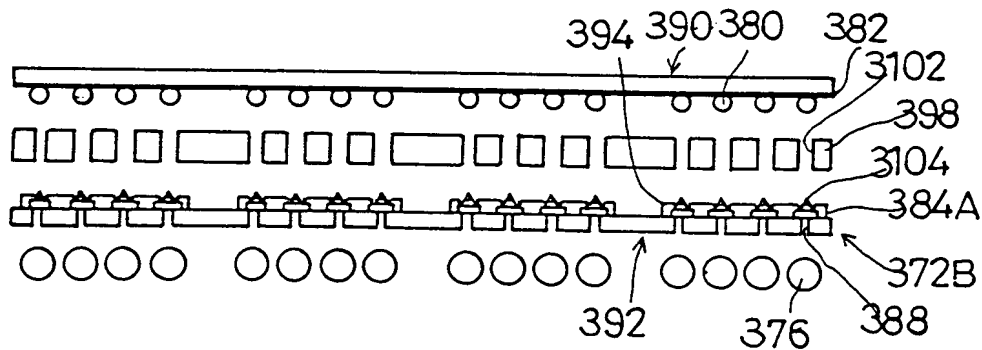


FIG. 162

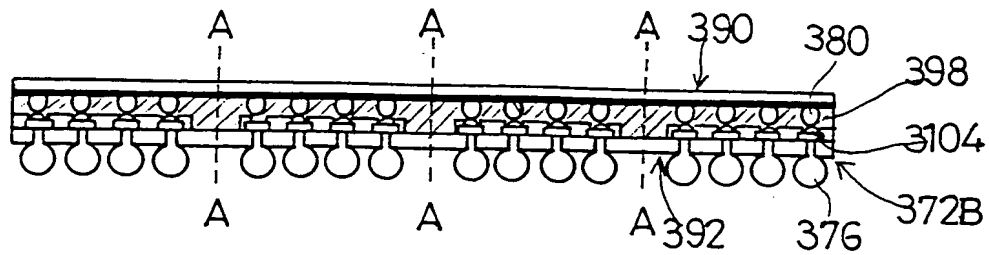


FIG. 163

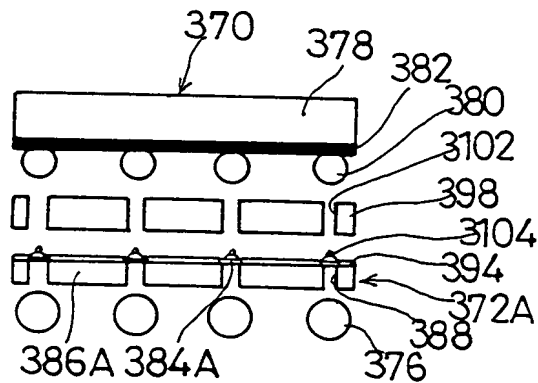


FIG. 164

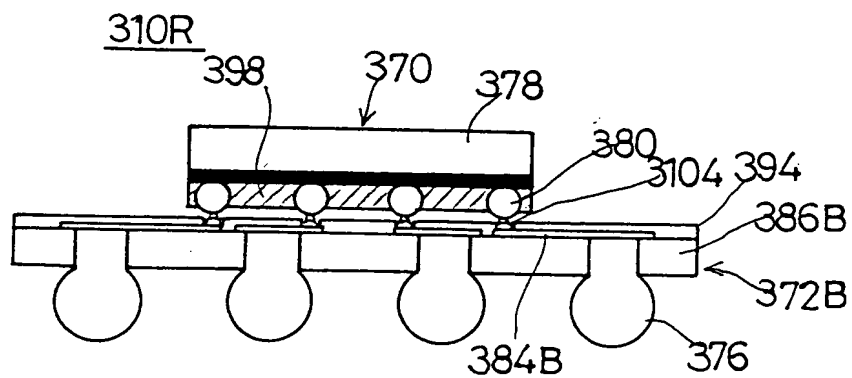


FIG. 165

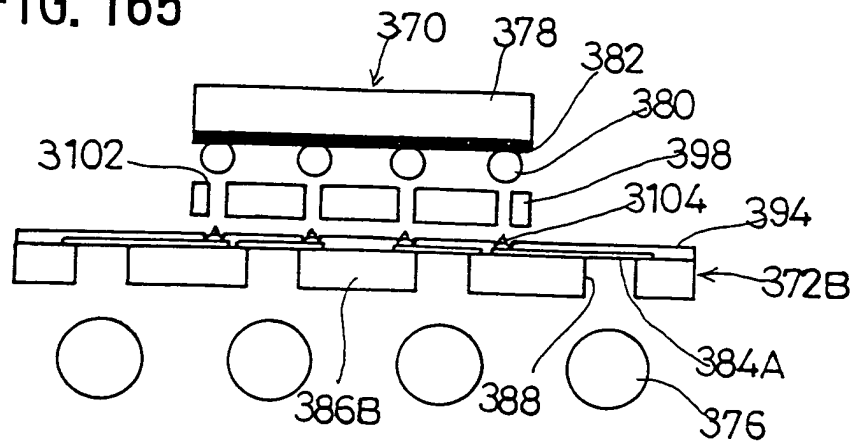


FIG. 166

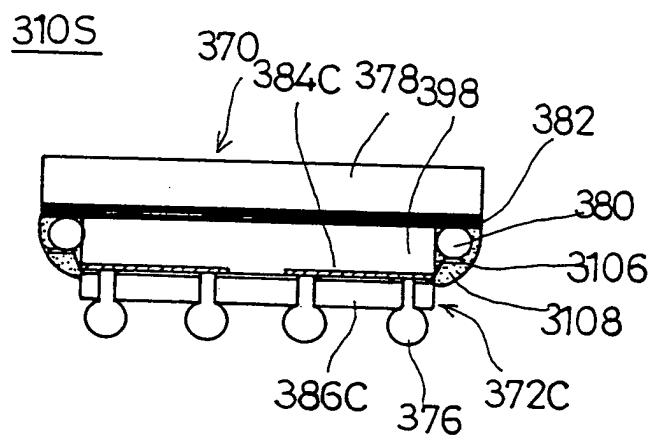


FIG. 167

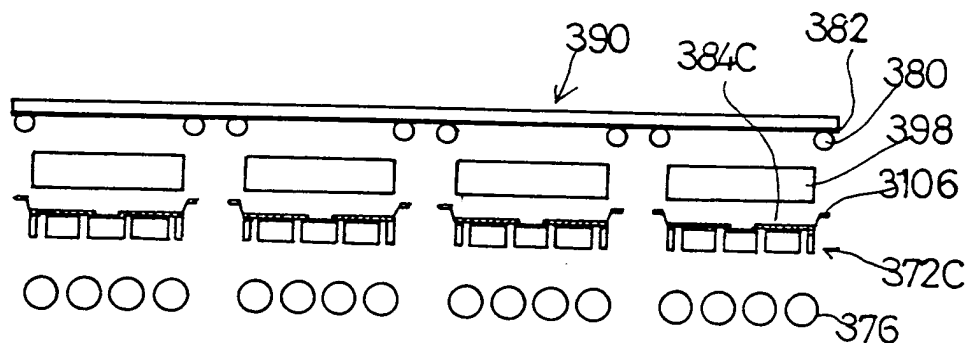


FIG. 168

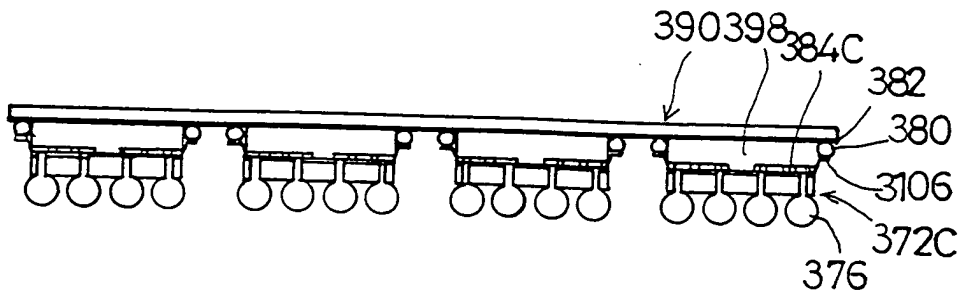


FIG. 169

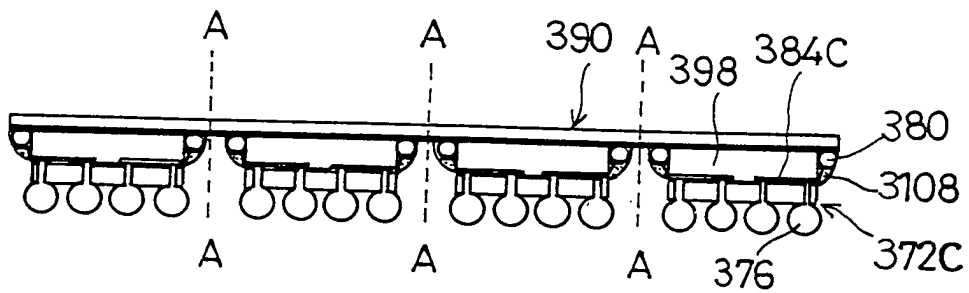


FIG. 170

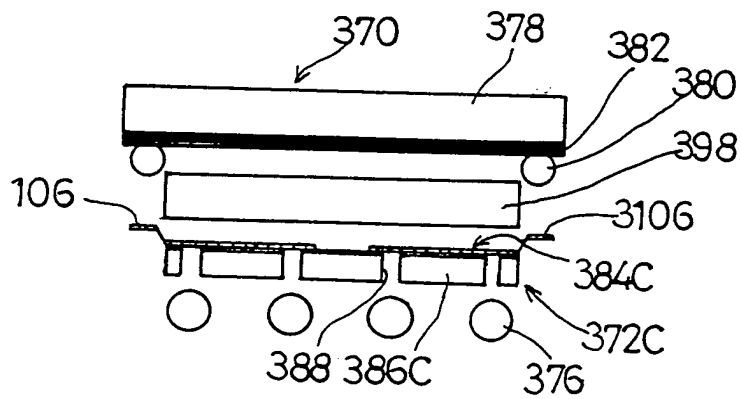




FIG. 171

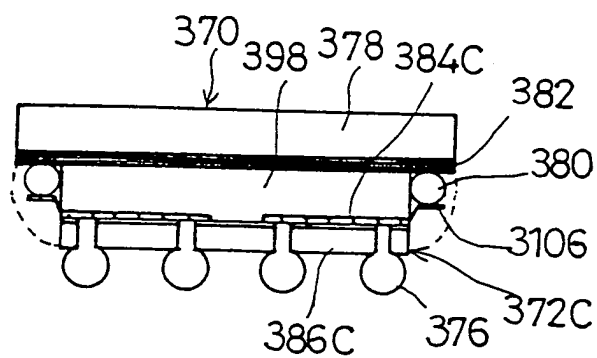
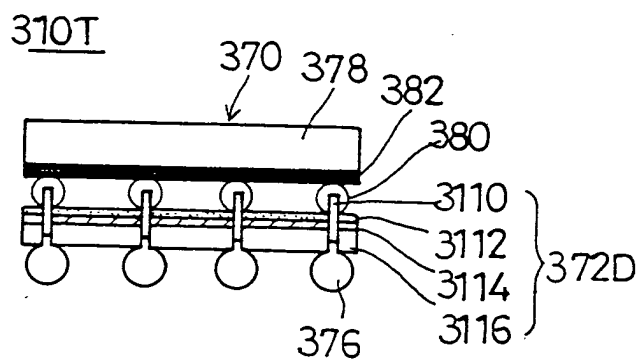


FIG. 172

(A)



(B)

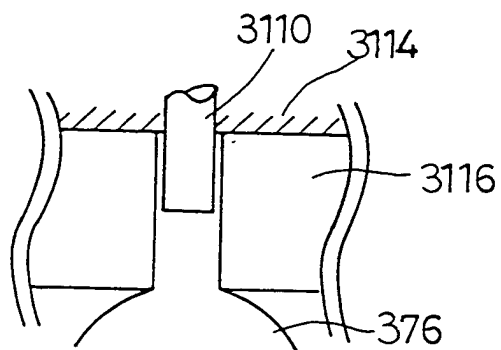


FIG. 173

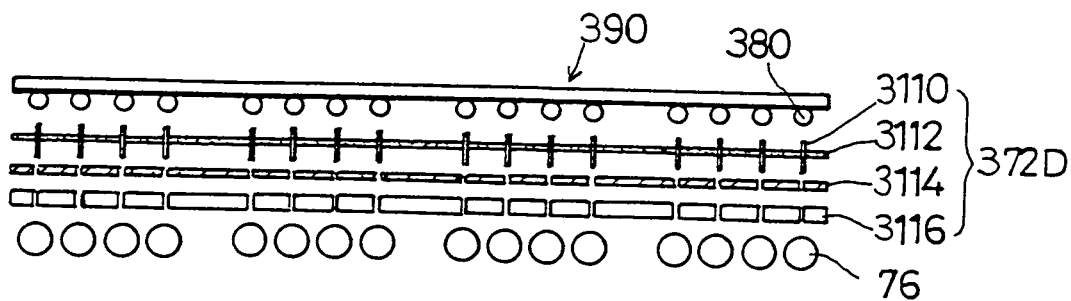


FIG. 174

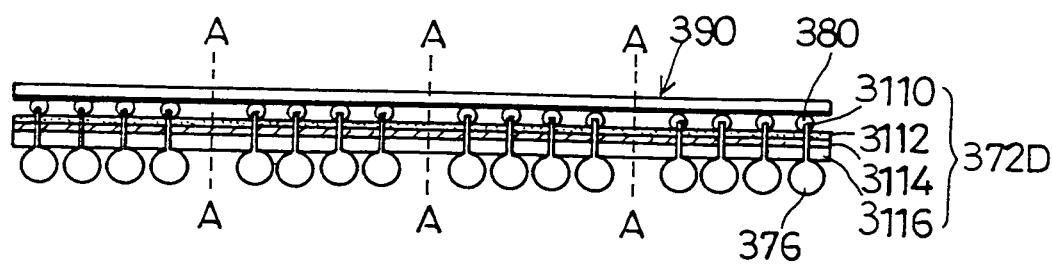


FIG. 175

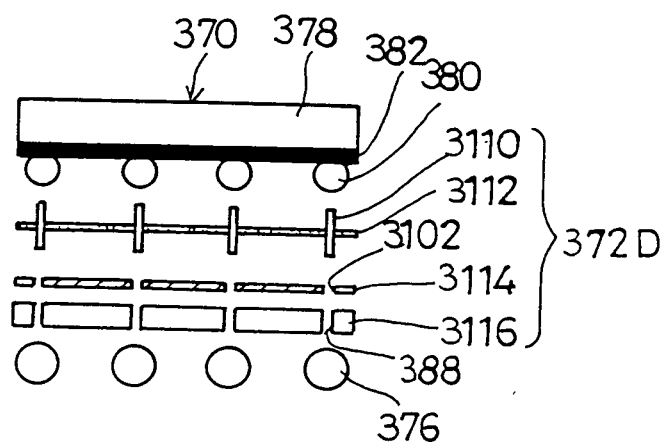


FIG. 176

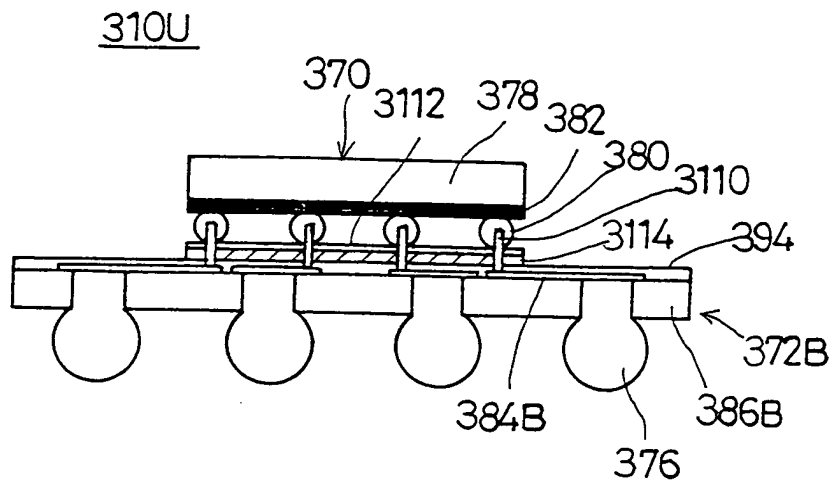


FIG. 177

